



High Grove Solar

Preliminary Environmental Information Report

Chapter 6 Biodiversity

April 2025

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6 Biodiversity

6.1 Introduction

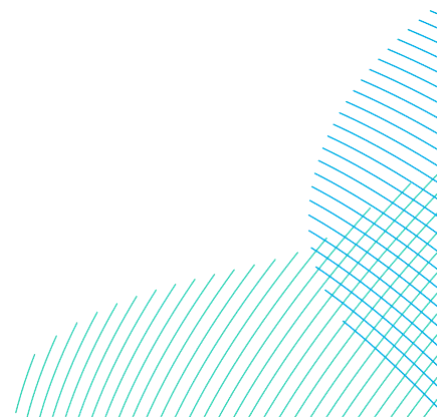
- 6.1.1.1 This chapter of the Preliminary Environmental Information Report (PEIR) presents the findings of the preliminary assessment of the likely significant effects arising from the construction, operation and decommissioning of the Proposed Development in respect of biodiversity.
- 6.1.1.2 This chapter sets out the relevant legislation, policy, standards and guidance applied to the assessment process; consultation undertaken to inform the assessment; assessment methodology; the relevant baseline conditions upon which the assessment is based; embedded and good practice mitigation considered in place before the assessment is undertaken; the likely significant effects that may arise as a result of the Proposed Development considering embedded and good practice mitigation; and any further mitigation requirements to avoid or reduce the likely significant effects; the remaining residual effects following further mitigation; and any monitoring required for remaining significant effects.
- 6.1.1.3 The following matters have been assessed as part of the scope and methodology for biodiversity:
- Impacts to statutory and non-statutory designated sites
 - Loss of habitat (both permanent and temporary)
 - Impacts to protected and notable (Section 41, Red Data Book) species
- 6.1.1.4 Understanding intra-project effects between topics is an integral part of the Environmental Impact Assessment (EIA) process and have been considered within this chapter. The conclusions of the following topic assessments are considered relevant to the receptors considered within this assessment, and as such are taken into account in the overall assessment for Biodiversity:
- Chapter 10 Landscape and Visual
 - Chapter 11 Noise and Vibration
 - Chapter 14 Water Resources and Flood Risk
- 6.1.1.5 This chapter is supported by the following figures:
- 6.1 Waterbody Location Plan
 - 6.2 Designated Wildlife Sites within 10km
 - 6.3 Local Wildlife Sites within 2km
 - 6.4 Ancient Woodland within 2km
 - 6.5 Priority Habitats within 2km
 - 6.6 UKHab Habitat Plan
 - 6.7 Otter and Water Vole Survey Results Plan

6.1.1.6 This chapter is supported by the following appendices:

- Appendix 6.1 Preliminary Ecological Appraisal
- Appendix 6.2 Riparian Mammal Survey
- Appendix 6.3 Habitat Regulations Assessment Screening
- Appendix 6.4 Breeding Bird Survey Report
- Appendix 6.5 Non-Breeding Bird Survey Report

6.2 Relevant legislation, policy, standards and guidance

6.2.1.1 This section identifies the relevant legislation, planning policy, standards and guidelines which have informed this assessment, including the methodology and identification of mitigation.



6.2.2 Legislation

Table 6-1 Biodiversity - Legislation

Legislation	Relevance to assessment
The Environment Act 2021 [1] The Act makes provision about targets, plans and policies for improving the natural environment, for statements and reports about environmental protection, about nature and biodiversity and for conservation covenants amongst others. The Act also sets out Biodiversity Net Gain requirements, which although not currently mandatory, are expected to be applicable to Nationally Significant Infrastructure Projects (NSIPs) in November 2025	A Biodiversity Net Gain (BNG) assessment will be prepared for the project to describe the expected biodiversity change post-development; this will be submitted with the Environmental Statement (ES) as part of the Development Consent Order (DCO) application.
Conservation of Habitats and Species Regulations 2017 (the 'Habitats Regulations') [2] as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 These regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna ('the Habitats Directive') into national law. They also transpose elements of Council Directive 2009/147/EC on the conservation of wild birds ('the Birds Directive'). The Habitats Regulations provide the framework for the protection of Natura 2000 sites (now referred to as the national site network following the amendments that came into force on 31 December 2020), and for certain flora and fauna (known as European Protected Species (EPS)). The regulations set out the process for the assessment of development.	The Proposed Development may result in effects to protected species and on constituents of the national site network and EPS which require assessment in line with the Habitats Regulations. PEA surveys have been undertaken and reported in Appendix 6.1; a summary of survey findings is included in Section 6.5.2. A preliminary assessment has been undertaken and is included in Section 6.8. A Habitats Regulations Assessment (HRA) will be undertaken and submitted with the ES as part of the DCO application. A HRA screening report is provided in Appendix 6.3.
Natural Environment and Rural Communities Act 2006 (the 'NERC Act') [3] The NERC Act (amongst other matters) places a duty to conserve biodiversity on public authorities in England. This requires local authorities and government departments to have regard to the purposes	The Proposed Development may result in effects to HPI and SPI in England. Baseline and preliminary ecological assessments (PEA) have been undertaken and reported in Appendix 6.1; a summary of survey findings is included in Section 6.5.2. These surveys have been completed to

Legislation	Relevance to assessment
of conserving biodiversity in a manner that is consistent with the exercise of their normal functions. The NERC Act also places a duty on the Secretary of State to maintain lists of species and habitats which are regarded as being of principal importance for the conservation of biodiversity in England. These Habitats of Principal Importance (HPI) and Species of Principal Importance (SPI) are used to guide decision makers in implementing their duties to have regard to the conservation of biodiversity in England when carrying out their normal functions.	assess the HPI and SPI within the ZoI, these are outlined in Section 6.6 and assessed in Section 6.8 of this PEIR. A Habitats Regulations Assessment (HRA) will be undertaken and submitted with the ES as part of the DCO application. An HRA screening report is provided in Appendix 6.3.
Countryside and Rights of Way Act 2000 (the 'CRoW Act') [4] The CroW Act, amongst other elements, details further measures for the management and protection of Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation.	The Proposed Development may result in effects on SSSIs and protected flora and fauna. The effects on SSSI and protected flora and fauna are outlined in Section 6.6 and assessed in Section 6.8 of this PEIR and shown within the PEA Appendix 6.1.
The Hedgerows Regulations 1997 (the 'Hedgerow Regulations') [5] The Hedgerows Regulations facilitate the protection of hedgerows growing in or adjacent to common land, protected land or land used for agriculture, forestry or the breeding and keeping of horses, ponies, or donkeys.	The Proposed Development may result in some impacts on hedgerows, located within the Panel Areas, deemed important by the Hedgerows Regulations. Such impacts may include their removal to facilitate access and maintenance to prevent shading of solar PV modules. Further details on hedgerows within the Panel Areas and their potential impacts are provided in the PEA report in Appendix 6.1. A summary of hedgerows within the draft Order Limits is outlined in Section 6.6 and assessed in Section 6.8 of this PEIR. As per mitigation outlined in Section 6.7, and the draft Outline Landscape and Ecology Management Plan (oLEMP), cutting of hedgerows will be undertaken within appropriate timing.
Protection of Badgers Act 1992 (the 'Protection of Badgers Act') [6] The Protection of Badgers Act consolidated and improved protection for badgers. It specifically makes it an offence to kill, injure or take a badger,	The Proposed Development may result in effects on badgers and their setts.

Legislation	Relevance to assessment
or damage or interfere with a sett unless a licence has been obtained from a statutory authority.	Further details on badgers within the Panel Areas will be provided in the ES. A summary of likely effects to badgers is outlined in Section 6.6 and assessed in Section 6.8 of this PEIR.
Wildlife and Countryside Act 1981 (WCA) [7] The WCA consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (‘the Bern Convention’) and Council Directive 79/409/EEC on the conservation of wild birds (Birds Directive). Amongst other matters it provides protection for wild birds, certain flora and fauna and sets the framework for the protection and management of SSSIs.	The Proposed Development may result in effects on SSSIs and protected flora and fauna. Further details on SSSIs and protected flora and fauna and their potential impacts within the Panel Areas are provided in Appendix 6.1 and are outlined for the draft Order Limits in Section 6.6 and assessed in Section 6.8 of this PEIR.
The Management of Hedgerows (England) Regulations 2024 [8] The Management of Hedgerows Regulations outline cutting restrictions, buffer zones and hedgerow responsibilities. Cutting and trimming of important hedgerows is prohibited from March 1 st to August 31 st each year, with exceptions for safety reasons or maintaining public pathways.	The Proposed Development may require some maintenance of hedgerows to avoid shading of panels. As per mitigation outlined in Section 6.7, and the oLEMP, cutting of hedgerows will be undertaken within appropriate timing.

6.2.3 Policy

Table 6-2 Biodiversity - Policy

Policy	Relevance to assessment
Overarching National Policy Statement for Energy (NPS EN-1), 2024 [9] This policy sets out overarching government policy on the need for nationally significant infrastructure projects (NSIPs), how applications for energy infrastructure will be assessed and the way in which impacts, and mitigation will be judged.	This PEIR follows guidance set by EN-1. A BNG assessment will be prepared for the Proposed Development to describe the expected biodiversity change post-development, this will be submitted with the ES as part of the DCO application.

Policy	Relevance to assessment
The policy highlights how NSIP applications should be delivering BNG, in line with the ambition set out in the Environmental Improvement (EIP) and any statutory targets set, as well as demonstrating wider environmental gains and benefits to communities in the local area or national policy priorities where appropriate, such as through reducing greenhouse gas emissions, carbon sequestration, reducing flood risk, improving air or water quality or feeding into the Local Nature Recovery Strategies (LNRS) if delivering BNG offsite for example (Paragraphs 4.6.2 to 5.4.3 and 5.4.33 to 5.4.34).	Section 6.12 of this PEIR outlines the enhancements provided by the Proposed Development. An HRA screening report is provided in Appendix 6.3. Further details on SSSIs and protected flora and fauna and their potential impacts within the Panel Areas are provided in Appendix 6.1 and are outlined for the draft Order Limits in Section 6.6 and assessed in Section 6.8 of this PEIR.
Additionally, in regard to protected sites, where the proposed NSIP location is near to or could potentially impact designated or possible SACs or SPAs, HRA's for NSIPs becomes mandatory (Paragraph 5.4.4 to 5.4.5).	Assessments of the HPI and SPI within their ZoI, are outlined in Section 6.6 and assessed in Section 6.8 of this PEIR.
“Development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits (including need) of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs.” (Paragraph 5.4.8).	Mitigation measures are addressed and outlined within Section 6.7 of this PEIR. In this chapter, designated sites and their impact have been assessed within Section 6.8, for construction, operation and decommissioning of the project.
Information of any mitigation measures that are proposed and are likely to minimise or avoid significant effects to protected sites should be included to the Secretary of State. Any protected site that will be adversely affected by the development will require compensatory measures and compensation plans to be considered by the Examining Authority (Paragraph 5.4.25 to 5.4.31).	Impact of migratory and mobile species from the proposal are considered within Section 6.8 of this PEIR,
Where an EIA is required, NPS EN-1 recommends that the ES should ‘clearly set out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance (including those outside England), on protected species and on habitats	Appropriate avoidance, mitigation, compensation and management for the Proposed Development are detailed within the draft outline Construction and Ecological Management Plan (oCEMP) and oLEMP, to respond to paragraph 5.4.36 of NPS EN-1.

Policy	Relevance to assessment
and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats' such as ancient woodland, ancient and veteran trees and scrub (Paragraph 5.4.14 to 5.4.18). Both direct and indirect effects during both construction and operational phases should be fully considered (Paragraph 5.4.32). The policy further states that the design of any NSIP proposal should identify and consider any mobile / migratory species such as birds, fish and marine and terrestrial mammals and their potential to interact with infrastructure (Paragraph 5.4.22). Appropriate avoidance, mitigation, compensation and enhancement measures are integral to the Proposed Development and a Biodiversity Management Strategy should be included with the NSIP proposal. For example, through limiting the timing of construction and operation to minimise disturbance, operating within the minimum areas possible to reduce the area of disturbance created, restoring or enhancing or creation of habitats where appropriate. (Paragraph 5.4.35 to 5.4.36).	
NPS for Renewable Energy Infrastructure (EN-3), 2024 [10] This policy sets out government policy on nationally significant renewable energy infrastructure projects (NSIPs) and includes the need to ensure that: Ecological assessments identify any ecological risks and likely impacts imposed from NSIPs, such as from lighting, soil stripping, earthworks, access roads, cable trenching, management of boundaries such as hedgerows and fencing, on ecological features. Ecological features can include, but are not limited to habitats, birds, bats, dormice, reptiles, great crested newts, water voles and badgers (paragraph 2.10.76 to 2.10.83). The use of 'desk-studies' of existing ecological records may be included within the assessment.	In line with EN-3 a suite of ecological assessments on various features, including habitats, birds, bats, water voles and badgers, has been undertaken, including the use of desk-studies and baseline surveys (see Section 6.6). A BNG assessment will be prepared for the project to describe the expected biodiversity change post-development, this will be submitted with the ES as part of the DCO application. Section 6.12 of this PEIR outlines the enhancements provided by the Proposed Development. This PEIR considers soil stripping/ replacing, lighting, and proposed enhancements (see Section 6.12).

Policy	Relevance to assessment
An ecologist should be used to advise on the project to ensure impacts are 'avoided, minimised or mitigated in line with the mitigation hierarchy, and biodiversity enhancements are maximised' (paragraph 2.10.78 to 2.10.79). NSIPs should aim to achieve environmental and BNG in line with the EIP and any other relevant and statutory targets and could include the creation or maintenance of habitat (paragraph 2.10.128 to 2.10.129). It is advisable that NSIPs 'develop an ecological monitoring programme to monitor impacts upon the flora of the site and upon any particular ecological receptors' to inform any land management changes required (paragraph 2.10.130).	Appropriate avoidance, mitigation, compensation and management for the Proposed Development are detailed within the oCEMP and draft oLEMP, to respond to paragraph 2.10.130 of NPS EN-3.
National Planning Policy Framework (NPPF), December 2023 [11] The NPPF sets out the government's planning policies for England and how these should be applied. While the NPPF outlines the planning policies, the NPS are the primary determinant of decisions on NSIPs and the NPPF is a material consideration only. The assessment for this NSIP will focus on relevant sections of the NPPF, particularly paragraphs 179-182 within Section 15: Conserving and enhancing the natural environment. Within these paragraphs the NPPF lays out its requirements for planning policies and decisions to protect, enhance and minimise impacts on sites of biodiversity value and provide improvements to biodiversity and BNG within and surrounding the project. This includes the safeguarding of local wildlife-rich habitats and ecological networks, designated and non-designated sites, HPI and SPIs.	The NPPF has been followed as part of this PEIR. BNG assessment will be prepared for the project to describe the expected biodiversity change post-development, this will be submitted with the ES as part of the DCO application. Further details on SSSIs and protected flora and fauna and their potential impacts within the Panel Areas are provided in Appendix 6.1 and are outlined for the draft Order Limits in Section 6.6 and assessed in Section 6.8 of this PEIR. Assessments of the HPI and SPI within their ZoI, are outlined in Section 6.6 and assessed in Section 6.8 of this PEIR.

Policy	Relevance to assessment
If significant harm or adverse impacts on a SSSI or biodiversity cannot be avoided, mitigated or compensated for, it is advised that permission is refused.	
Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services [12] This strategy sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea, in relation to international and EU commitments.	The assessment, mitigation and enhancements have been informed by Biodiversity 2020.
The Environmental Improvement Plan (EIP) [13] The plan sets out how the government will work with landowners, communities and business to deliver goals for improving the environment at interim targets.	As outlined in this chapter there will be a range of ecological benefits as a result of the Proposed development in line with the EIP.
Breckland Local Plan, September 2023 [14] The plan sets a spatial vision and strategy for the District, with economic, social and environmental objectives. Key Policies include: GEN 01: Sustainable Development in Breckland - enabling development that improves economic, social and environment objectives such as through mitigating and adapting to climate change, creation of jobs and economy in rural areas, protection and enhancement of the natural, built and historic environment. ENV 01: Green Infrastructure – current green corridors and water bodies are to be safeguarded. Projects should seek and enhance connectivity between green infrastructure for example between Public Rights of Way and designated areas. Compensation through new and/or enhancements to existing green infrastructure is required if the project will cause adverse impacts on current green infrastructure. Provision of future	This PEIR chapter has included reference to the local plan to inform the assessment of species and sites which occur within the Brecks. Creation of further public rights of way, natural buffers/wildlife corridors, enhancements of hedgerows and further enhancement plans are currently ongoing within the design-phase of the project. A HRA will be undertaken and submitted with the ES as part of the DCO application. An HRA screening report is provided in Appendix 6.3. Further details of protected flora and fauna and the potential impacts on them within the Panel Areas are provided in Appendix 6.1 and are outlined for the draft Order Limits in Section 6.6 and assessed in Section 6.8 of this PEIR. A bespoke survey for stone curlews has been undertaken.

Policy	Relevance to assessment
management plans will be required, in accordance with ENV 04 and INF02 of the Breckland Local Plan. ENV 02: Biodiversity Protection and Enhancement – Any development likely to have a potential adverse effect on European sites or a site of national, regional or local biodiversity, or geological interest, must have mitigation measures that are fit for purpose with appropriate evidence to inform the council’s HRA. It is likely that developments likely to have adverse effects would not be permitted unless: - It can clearly demonstrate the gains outweigh the need to safeguard the special interest of the site. - No alternative sites, with less harm/impact available - Residual harm will be adequately compensated An Ecological Impact Assessment (EcIA) is required with the planning application where a designated site, protected species or habitat (particularly Priority Habitat or Section 41 Species) may be adversely affected by the development proposal. The mitigation hierarchy should be used to demonstrate how effects have been avoided and where effects cannot be avoided, how they have been minimised. Any residual harm must be appropriately compensated. All developments should demonstrate how biodiversity net gains will be achieved.	A BNG assessment will be prepared for the project to describe the expected biodiversity change post-development, this will be submitted with the ES as part of the DCO application. Mitigation for trees and hedgerows has been outlined within Section 6.7 of this PEIR. A draft Arboricultural Impact Assessment is included in Appendix 10.4 of this PEIR.

Policy	Relevance to assessment
Where required, appropriate conditions and/or planning obligations will be set out by the authority to ensure that the appropriate mitigation measures are fully implemented within the proposal. ENV 03: The Brecks Protected Habitats & Species – development will only be permitted where a HRA can demonstrate the Breckland SPA and/or Breckland SAC (including stone curlews specifically as well as woodlark and nightjar) will not be adversely affected by the proposal. ENV 06: Trees, Hedgerows and Development – trees and significant hedge and shrub masses should be retained as an integral part of the design of development (there are some exceptions including any with compromised physical conditions). Any losses should justify how the gains would outweigh the loss of any tree or hedgerow and the loss should be appropriately compensated, considering the size, condition and value of the tree. Any trees retained within the project should have appropriate measure in place to ensure their protection including the use of root protection zones to ensure harmful impacts do not occur to existing trees for the duration of the works. A Tree Survey, Arboricultural Impact Assessment, Tree Protection Plan and Method Statement may be required with the development application, undertaken by a suitably qualified professional in accordance with BS5837:2012.	

6.2.4 Standards and guidance

Table 6-3 *Biodiversity - Standards and guidance*

Standards	Relevance to assessment
Guidelines for Preliminary Ecological Appraisal, 2nd ed. Chartered Institute of Ecology and Environmental Management CIEEM, 2017. [15]	The approach to survey scope and methodology has been developed in accordance with best practice guidance.
Guidelines for Ecological Impact Assessment in the UK and Ireland CIEEM, 2018. [16]	The approach to assessment has been developed in accordance with best practice guidance.
UKHab Habitat Classification Version 2.0. UKHab 2023. [17]	This classification criteria for habitats has been used within the preliminary ecological assessment (see Appendix 6.1) and existing baseline (Section 6.6.2).
The Statutory Biodiversity Metric User Guide November, 2023. [18]	The BNG assessment will be undertaken in accordance with best practice guidance as per the User Guide.
Bird Survey Guidelines for Assessing Ecological Impacts. Bird Survey & Assessment Steering Group. [19]	The guidance for the methodology/approach to breeding and non-breeding bird surveys has been used in the assessment (see Appendix 6.4 and 6.5)
Bat Surveys for Professional Ecologists. 2023 [20]	The approach to survey scope and methodology has been developed in accordance with best practice guidance and will be described in a bat report as part of the ES.
Surveying Badgers (1989) [21]	The approach to survey scope and methodology has been developed in accordance with guidance on the methodology/approach to survey badger and will be described in a badger report as part of the ES.
Monitoring the Otter (2003) [22]	The approach to survey scope and methodology has been developed in accordance with guidance on the methodology/approach to survey otter (see Appendix 6.2)

Standards	Relevance to assessment
Water Vole Conservation Handbook (2011) [23]	The approach to survey scope and methodology has been developed in accordance with best practice guidelines to survey water vole (see Appendix 6.2).
Technical advice note for field and laboratory sampling of great crested newt environmental DNA (eDNA) (2014) [24]	The approach to survey scope and methodology has been developed in accordance with guidance on methodology used to complete eDNA surveys for Great Crested Newts (GCN) and will be described in a GCN report as part of the ES.

6.3 Consultation

6.3.1 Scoping opinion

6.3.1.1 An EIA Scoping Report was submitted on 6 September 2024 and a Scoping Opinion published by the Planning Inspectorate on 17 October 2024. A summary of the key comments received and how these have been addressed in this assessment or will be addressed in the ES is presented in Table 6-4 below.

Table 6-4 *Summary of PINS comments and responses for biodiversity*

ID	Comment	Response
3.3.1	The Scoping Report concludes that there would be no likely significant effects on the following designated sites due to distance and lack of suitable connecting habitat: • Honeypot Wood, Wendling Special Site of Scientific interest (SSSI); • Narborough Railway Embankment SSSI; • Dereham Rush Meadows SSSI; • Castle Acre Common SSSI;	The River Wensum Special Area of Conservation (SAC) and SSSI are scoped in for further assessment due to the hydrological connection via the Wendling Beck and tributaries. This matter is discussed in Section 6.6 and will be addressed within the HRA to be submitted for the DCO application. The HRA Screening is available in Appendix 6.3.

ID	Comment	Response
	• Bradley Moor SSSI; • Wayland Wood, Watton SSSI; • Great Cressingham Fen SSSI; • River Nar SSSI; • Breckland SAC; • Horse Wood, Mileham SSSI; • Potter's Carr Cranworth SSSI; • Old Bodney Camp SSSI; • Breckland Farmland SSSI; • Hooks Well Meadow, Great Cressingham SSSI; • Mattishall Mall SSSI; • East Walton and Adcock SSSI; • Beetley & Hoe Meadows SSSI; • Thompson water, Carr and Common SSSI; • Rosie Curstons Meadow, Mattishall SSSI; • Boughton fen SSSI; • Field Barn Heaths, Hilborough SSSI; • Scoulton Mere SSSI; • Foulton Common SSSI; • Gooderstone Warren SSSI; • East Winch Common SSSI; • River Wensum SAC; • River Wensum SSSI; • Coston fen Runhall SSSI; • Cranberry Rough Hockham SSSI; • Litcham Common Local Nature Reserve (LNR); and • Great Eastern Pingo Trail LNR. “It also considers that breeding bird interest features of Dillington Carr, Gressenhall SSSI are unlikely to be impacted given distance and that water and woodland habitats on the site would be retained.	It is noted that within Chapter 14 Water Resources and Flood Risk, with embedded mitigation, appropriate construction drainage design and good practice water management measures implemented, it is considered that the impacts to surface water quantity (and therefore the potential degradation of habitat) are negligible.

ID	Comment	Response
	The Inspectorate agrees that significant effects on these sites and features are unlikely and that they can be scoped out of further assessment, except River Wensum SAC. The Inspectorate notes that Wendling Beck (a tributary of the River Wensum) bisects the Northern Panel Areas, and a number of smaller tributaries run through the Eastern Panel Area and the Cable Corridors. The ES should assess the potential for significant effects from cable works should these watercourses be hydrologically linked to the SAC. Effects on the River Wensum SSSI should also be assessed, where significant effects are likely. Relevant cross reference should be made to the Water Resources and Flood Risk chapter of the ES."	
3.3.2	Table 7.9 states that bats from Stanford Training Area SSSI may forage along the hedgerows on the application site but proposes to scope out the SSSI from further assessment. Neither Table 7-5 or 7-9 identify bats as being a feature of this SSSI, therefore the Inspectorate queries whether this was a drafting error. On the basis that bats are not features of the SSSI, the Inspectorate agrees that significant effects on this site are unlikely and that the site can be scoped out of further assessment.	Bats are included in the Stanford training area SSSI citation: "Mount Epping Barn Pit contains a bat hibernaculum in chalk tunnels and a former lime kiln. The species recorded in the pit, listed in approximate decreasing order of abundance are: Daubenton's bat (<i>Myotis daubentonii</i>); Natterer's bat (<i>Myotis nattereri</i>); Brown Long-eared bat (<i>Plecotus auritus</i>); Brandt's bat (<i>Myotis brandtii</i>); Whiskered bat (<i>Myotis mystacinus</i>); and the Barbastelle (<i>Barbastella barbastellus</i>)." [25] Bats from the Stanford Training Area SSSI are therefore included in the proposed scope for further assessment. A preliminary assessment for bats found at this site in relation to the Proposed Development is included in Section 6.6.3.1 of this report.
3.3.3	The Inspectorate notes that INNS (invasive non-native species) would be managed through measures included in the oCEMP, and outline Decommissioning and Ecological Management Plan (oDEMP) to be submitted with the DCO application and proposes to scope out this matter.	A preliminary assessment of INNS is included in Sections 6.6 with measures during all phases of the Proposed Development outlined within the oCEMP, oLEMP and oDEMP.

ID	Comment	Response
	However, the Environment Agency has confirmed that it holds records of INNS in proximity to the draft Order Limits. As a result, the Inspectorate does not agree this matter can be scoped out of the ES. The ES should identify the locations of INNS records, assess any likely significant effects and detail and secure mitigation/ biosecurity measures during all phases of the Proposed Development to avoid/control the spread and introduction of INNS. In respect of operation, the Applicant should ensure necessary control and eradication measures are included within the draft/outline OEMP.	
3.3.4	The Inspectorate agrees that impacts on biodiversity receptors of less than 'Local' importance can be scoped out of the ES.	Noted, they are not considered further in the assessment.
3.3.5	Tables 7-16 and 22-1 propose to scope out operational phase effects on: • Statutory designated sites; • Non-statutory designated sites; • Priority habitats including Ancient Woodlands; • Great crested newts; • Riparian mammals (otter and water vole); • Reptiles; and • Badger. However, operational phase effects are scoped in for these receptors in Tables 7-9, 7-10, 7-11, 7-12 and 7-13. No supporting evidence has been provided to justify scoping out operational phase effects on these receptors. Nevertheless, given the nature of the operational phase, the Inspectorate considers significant effects are unlikely for the above listed species, Priority habitats and sites designated for habitats and flora; these can be scoped out of the ES.	A preliminary assessment is provided on the potential for impacts and significant effects on Breckland SPA in terms of disturbance and functionally linked land in Section 6.6. This matter will be further addressed within the HRA and ES to be submitted with the DCO application.

ID	Comment	Response
	However, the Inspectorate considers there is a potential for impacts on designated sites with breeding or nesting birds as interest features, including Breckland Special Protection Area (SPA) and SSSI, in terms of disturbance and effects of the loss of functionally linked land (including the loss of foraging resource). The ES should assess these impacts, where significant effects are likely.	
3.3.6	The Scoping Report proposes surveys for protected species in the Panel Areas only. The Inspectorate considers that potential impacts on protected species could arise from construction and operation of the substations, BESS and on-site supporting equipment, as well as from construction of the cable connections. It is therefore unclear why the Applicant has chosen not to survey these areas. The Applicant is advised to seek agreement on survey effort with relevant consultation bodies.	PEA surveys have been undertaken across the Panel Areas and will be undertaken in the Cable Corridors. The results of these surveys are included in Appendix 6.1. 132kV substations, BESS and other onsite equipment would be located within the Panel Areas. Further biodiversity baseline surveys may be undertaken in areas additional to the Panel Areas if required and will be included in the ES. The survey effort has been consulted on with Natural England.
3.37	The Applicant should monitor the ongoing updates to the Ancient Woodland Inventory described by the Forestry Commission, to inform the environmental baseline in relation to Ancient Woodland.	Noted – The Ancient Woodland Inventory has been checked and will continue to be monitored. The Forestry Commission has been contacted to provide further information on environmental baseline including ancient woodland. They have confirmed that all information they hold is publicly available on the Forestry Commission map browser.
3.3.8	It is not always clear in the Scoping Report which impact(s) will be assessed for which receptor. For example, the phrase “Potential for adverse impact due to close proximity” is repeatedly used, but without specifying which impacts would be assessed. The Inspectorate acknowledges the scoping process is early in the assessment process and expects clarity to be provided in the ES in this regard.	Clarity on which impacts are assessed for each receptor has been provided, see Section 6.8.

ID	Comment	Response
3.3.9	The Scoping Report explains that sensor-triggered lighting would be required at the substation for security/safety reasons, although these would not be lit continuously. The ES should assess effects of this lighting on light sensitive species, where significant effects are likely. For the avoidance of doubt, an assessment of effects from construction lighting should also be undertaken, where significant effects are likely.	Further detail on lighting has been provided, and a preliminary assessment of impacts is included in Sections 6.6 and 6.7.
3.3.10	The Scoping Report considers the potential for adverse impacts on Norfolk Valley Fens SAC and Potter & Scarning Fens, East Dereham SSSI due to hydrological connections. Natural England has noted that Potter & Scarning Fens, East Dereham SSSI is a component part of Norfolk Valley Fens SAC and is adjacent to the A47. It notes that the features of the SSSI and SAC may be sensitive to changes in air quality. Air quality impacts on these sites from construction traffic should be assessed, where relevant vehicle movement thresholds for assessment are exceeded.	Impacts to these sites as a result of air quality have been considered and described in Section 6.8. This matter will be further addressed within the HRA to be submitted with the DCO application.
3.3.11	The Broads SAC and Broadland Ramsar site have not been identified in the Scoping Report. The Inspectorate considers that further information is required to determine if watercourses present within the study area are hydrologically linked to the sites. The ES should assess the possible effects of cable works upon watercourses linked to these sites, where significant effects are likely.	The Broads SAC and Broadland Ramsar have been included, and a preliminary assessment is included in Sections 6.4 and 6.6. These sites have also been included in the HRA screening (Appendix 6.3), submitted alongside this PEIR. The designated sites are hydrologically linked to the site therefore they will be considered under stage two of the HRA (Appropriate Assessment of impacts).
3.3.12	The Scoping Report does not make reference to fish. The Environment Agency notes that the Wendling Beck and River Wissey, both located within the draft Order Limits, represent a pathway to fish and have advised that fish surveys be undertaken where cables are proposed to cross watercourses. The Applicant is advised to seek to agree survey effort with the Environment Agency. The ES should detail the baseline and include an assessment of likely significant effects on fish present in chalk rivers. Consideration should	Impacts to fish have been considered further within this Chapter, see Section 6.8. With the use of appropriate methods and embedded mitigation, no impact to fish is expected as a result to the Proposed Development.

ID	Comment	Response
	be given to noise and vibration during watercourse crossings, impacts of electromagnetic fields (EMF) from buried cables and potential smothering from fine sediment. Alternatively, the ES should provide evidence of subsequent agreement with relevant consultation bodies that significant effects are not likely.	
6.3.1.2	Full responses to comments received as part of the Scoping Opinion will be provided as part of the ES submitted with the DCO application.	
6.3.2 Stakeholder engagement		
6.3.2.1	The following stakeholders have been engaged with regards to Biodiversity as part of the assessment process so far:	
	• Natural England • Environment Agency • Breckland Council • Norfolk County Council • Royal Society for the Protection of Birds	
6.3.2.2	The outputs of the engagement undertaken are presented in Table 6-5.	

Table 6-5 Biodiversity - Engagement undertaken

Stakeholder	Date engaged	Matters raised	Response
Norfolk Biodiversity Information Service (NBIS) Environmental Records Information Centre	April 2024	Historic Biodiversity Data for statutory and non-statutory sites.	Biological and biodiversity data received on 13 May 2024.
Natural England	26 July 2024	Natural England have been consulted to provide a Discretionary Advice Service (DAS) in relation to the Proposed Development. Topics for discussion included proximity to Breckland Special Protection Area (SPA), Great Crested Newt approach and overall scope and approach to the ecological assessment.	Natural England agreed with the outlined scope of surveys and further discussions will be necessary on specific constraints.
Local Planning Authorities: Norfolk County Council and Breckland District Council	28 August 2024	Initial meeting with Local Planning Authorities to outline project and scope of biodiversity baseline assessment.	It was agreed that MORPH River Corridor Assessment would be undertaken for BNG on the few applicable water courses on site. Agreed that cumulative impacts on bats given other developments nearby would be taken into account. Confirmed that checks on any unidentified, unusual and suspected rare arable plants were being undertaken during habitat surveys, no rare plants were observed and therefore specific arable plant botanical surveys are likely to not be required.
Natural England and RSPB	15 October 2024	Natural England and RSPB on a joint call to focus on bird survey methods and results along with potential impacts and mitigation solutions. Discussions on Stone curlew specifics.	Recommendations to obtain further data from the Forestry Commission to assess forest felling plans and bird records. The Forestry Commission confirmed they do not hold any bird records (March 2025).

Stakeholder	Date engaged	Matters raised	Response
			Initial recommendations included timing of works to avoid the nesting bird season.
			Further discussions on specifics of mitigation will occur in due course.
Environment Agency	8 October 2024	The Environment Agency (EA) confirmed that fish must be included in the assessment due to the proximity of The Wendling Beck and The River Wissey. The EA have a number of records of fish including European bullhead (<i>Cottus gobio</i>) (Annex II Habitats Directive) that are present in the River Wissey and so could be present within the zone of influence (ZoI). Furthermore, European bullhead, brown/sea trout (<i>Salmo trutta</i>) (NERC S41 priority species), European eel (<i>Anguilla anguilla</i>) (NERC S41 priority species and Eel Regulations 2009) and brook lamprey (<i>Lampetra planeri</i>) (Annex II Habitats Directive) are all present within the Wendling Beck and thus could be present within the ZoI.	A preliminary assessment of potential impacts to fish have been considered within this chapter. With the use of appropriate methods and embedded mitigation no impact to fish is expected as a result of the Proposed Development.

6.4 Study area

6.4.1.1 The proposed study areas vary depending on the ecological feature considered, it incorporates the various ecological features identified within the draft Order Limits from the desk study and PEA (Appendix 6.1) as well as those features that can extend beyond the project boundary such as through hydrological links. The study area for each ecological feature for the draft Order Limits has been defined using standard CIEEM guidance [16]. The study area used to inform the relevant assessments cover the draft Order Limits, plus the specific Zones of Influence (ZoI) for each ecological feature where applicable, including:

- Land within the draft Order Limits assessed for its potential to support protected species (including bats, GCN, otters, water voles, reptiles, badgers, breeding birds and wintering birds) and priority habitat (such as hedgerows, field margins and woodlands) as part of the PEA.
- A 10km buffer around the draft Order Limits for the desk-based study for Statutory designated sites of International/European/National importance, including SAC, SPA, Ramsar sites and SSSI. Sites further than 10km but that are hydrologically linked are also included.
- A 2km buffer from the draft Order Limits for the desk-based study of all other non-statutory designated sites, as well as parcels of known ancient woodland, and records of legally protected and otherwise notable species.

6.4.2 Panel Areas

6.4.2.1 For Panel Areas, applicable ZoI are:

- Habitats and botanical species composition recorded within Panel Areas to allow habitat condition assessment and for BNG calculations.
- Waterbodies inside and within 100m of the Panel Areas are subject to Habitat Suitability Index (HSI) surveys for GCN. Waterbodies identified as providing better than “poor” suitability for GCN will be subject to eDNA surveys for GCN. *
- Up to 50m, to cover the 30m buffer requirement from the Panel Areas to survey for badger signs and setts*.
- 500m from the Panel Areas for non-breeding (wintering) bird surveys.
- Panel Areas for breeding bird surveys.
- Western Panel Area for the nightjar surveys and stone curlew surveys.
- Watercourses within and 100m from the Panel Areas were assessed for signs of and potential to support otter and water vole.*

*Where access is available

6.4.3 Cable Corridor

- 6.4.3.1 Current refinement processes for the location of the Cable Corridor have included a desk based ecological assessment and mapping of potential ecological features/constraints. This information was used to inform location options and uses the precautionary approach when considering the ZoI for ecological features within the Cable Corridor.
- 6.4.3.2 The Cable Corridor ZoI will be further refined for each ecological feature once preliminary ecological assessments and habitat surveys have been completed and assessed the potential for protected species present or using the areas within the Cable Corridor.
- 6.4.3.3 The extent of the desk study area(s) and field survey area were determined based on best practice guidance and a high-level overview of the types of ecological features present, and the potential effects that could occur from a development of this scale. The study areas were defined on a precautionary basis to ensure that, as a minimum, the ZoI relevant to all ecological features are covered during baseline data collection activities.
- 6.4.3.4 Whilst the entire draft Order Limits are subject to preliminary baseline data collection, those areas more likely to host solar PV modules, substations and other supporting solar infrastructure are subject to a greater degree of survey effort at this stage, compared to other areas, of the draft Order Limits, and therefore ensuring survey effort is proportional to risk.

6.5 Assessment methodology

6.5.1 Impact Assessment Methodology

- 6.5.1.1 This assessment is based on the Guidelines for Ecological Impact Assessment in the UK and Ireland produced by CIEEM [26]. The assessment contains a detailed description of the baseline conditions, based on field surveys and the collation of available historical desk study data up to the present time. Comments and feedback from statutory bodies and interested parties received to date have been reviewed and considered within the preliminary assessment. The preliminary assessment documents those valued features, including habitats, species and conservation sites, within the ZoI of the Proposed Development and includes an assessment of the ecological value of these features within the draft Order Limits.
- 6.5.1.2 Potential effects resulting from the construction, operation and decommissioning of the Proposed Development have been assessed and preliminary effects reported in terms of their significance for the integrity and conservation status of all relevant, valued ecological features.
- 6.5.1.3 Where part of a designated site is located within the ecological ZoI, in relation to a particular biophysical change as a result of the Proposed Development, an assessment of the impacts on the entirety of the designated site has been undertaken. A similar approach has been taken for areas of notable habitat.

- 6.5.1.4 For the fauna species that are present within the ZoI, the preliminary assessment has considered the total area that is used by the affected individuals and/or the local population of the species (e.g. for foraging or as breeding territories).
- 6.5.1.5 CIEEM (2018) defines a significant effect as one “*that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general*”.
- 6.5.1.6 When considering potentially significant effects on ecological features, whether these be adverse or beneficial, the following characteristics of environmental change are taken into account¹:
- Whether an impact is considered to be positive or negative.
 - The extent of the impact.
 - Its magnitude.
 - Duration of the impact.
 - Whether the impact is reversible.
 - Its timing and frequency.
 - Whether any of the impacts are cumulative in effect.

Baseline sources of information

Desktop sources

- 6.5.1.7 The following desktop sources have been used to inform the existing baseline conditions of the study area:
- 6.5.1.8 Multi-Agency Geographic Information for the Countryside (MAGIC) Maps [27], was used to provide information on designated sites, SSSI impact zones, GCN and bat licencing.
- 6.5.1.9 Satellite imagery, such as Google Earth [28], was used to assess likely habitat features and areas of further ecological assessment.
- 6.5.1.10 Ordnance survey (OS) maps were used initially to assess habitat features such as waterbodies and watercourses.
- 6.5.1.11 For Norfolk, risk zones for GCN are mapped by Natural England [29]. This dataset was checked in relation to the draft Order Limits. It identifies areas where the distribution of GCN has been categorised into district zones relating to GCN occurrence and the level of impact the Proposed Development is likely to have on this species.
- Red zones contain key populations of GCN, which are important on a regional, national or international scale and include designated SSSI for GCN.

¹ The definitions of the characteristics of environmental change are based on the descriptions provided in CIEEM 2018. Other chapters in this PEIR may use some of the same terms albeit with a different definition

- Amber zones contain main population centres for GCN and comprise important connecting habitat that aids natural dispersal.
- Green zones contain sparsely distributed GCN and are less likely to contain important pathways of connecting habitat for this species.

Norfolk Biodiversity Information Service (NBIS) data records

- 6.5.1.12 A historic biodiversity data search was requested and received from the NBIS Environmental Records Information Centre on 13 May 2025. The data set included international statutory designated sites of ecological importance within 10km of the draft Order Limits: Ramsar sites, SACs and SPAs. Additionally, a data set for SSSI, National Nature Reserves (NNR) and Local Nature Reserves (LNR) within 2km from the draft Order Limits was provided.

6.5.2 Surveys and undertaken and proposed

- 6.5.2.1 The following surveys of the Panel Areas have been undertaken and used to inform the existing baseline conditions described in this PEIR (as agreed at Scoping):

- Extended UK HAB (UK Habitat Classification) survey and habitat information for condition assessment for Biodiversity Net Gain.
- Otter and Water Vole surveys.
- GCN Habitat Suitability Index (HSI) of waterbodies within 100m of Panel Areas (partially complete).
- GCN environmental DNA (eDNA) sampling of waterbodies within 100m of Panel Areas (partially complete).
- Breeding Bird surveys.
- Wintering Bird surveys (first year complete, second year partially complete).
- Automated bat detector surveys.
- Seasonal Night-time Bat Walkover surveys (three survey sessions complete).
- Badger surveys.

- 6.5.2.2 The following survey methods have been used (or will be used) to inform the ES to be submitted with the DCO application:

UK HAB – Habitats survey

- 6.5.2.3 The Panel Areas have been subject to an extended UK Habitats Survey for PEA, details of which can be found within the Appendix 6.1. The objectives of the PEA undertaken for the Proposed Development, are to:

- Identify the likely ecological constraints to the development proposals.
- Identify any additional surveys (e.g. protected species surveys) that may be required to inform the design of these measures.

- 6.5.2.4 Suitably qualified ecologists undertook an Extended UK Habitats survey throughout 2024, following standard methodology. The survey followed the 'UK

Habitat Classification' [17] methodology with each of the main habitats within the Panel Areas, classified according to the relevant criteria, including vegetation composition.

6.5.2.5 In addition to the mapping and description of habitats, the survey was 'extended' to include the incidental observations of protected and/or notable species and the potential for such species to occur within the draft Order Limits (and in the surrounding landscape where relevant) were also recorded onto secure digital media for mapping and data collection. The extended element of the survey was based on professional judgement, but included noting, amongst other features:

- Potential badger setts.
- Presence of Potential Roost Features for bats in trees.
- Features that could provide refuges for protected species such as reptiles.
- Potential rare plants (photographs taken and checked by a botanist with at least a level 5 Field Identification Skills Certificate (FISC)).
- INNS as listed on Schedule 9 of the WCA.

6.5.2.6 Further details on the survey methodology can be found in the PEA in Appendix 6.1.

Riparian Mammal Surveys

6.5.2.7 Water vole and otter surveys were undertaken on watercourses within the Panel Areas, within the breeding season, which runs from April to October, with the first survey conducted in April-June 2024 and the second in July-October 2024. The surveys included a visual inspection of the banks of the watercourse to look for signs of these species, such as latrines, burrows and footprints.

6.5.2.8 Further details of the survey methodology for riparian mammals can be found in Appendix 6.2.

Great Crested Newt Surveys – Habitat Suitability Index

6.5.2.9 HSI assessments have been undertaken for all suitable waterbodies within the Panel Areas and a surrounding buffer of 100m where access was available.

6.5.2.10 The HSI of a water body is comprised of a numerical scoring system, with waterbodies scoring on a scale between 0 and 1 [30]. Ten suitability indices are used to generate a geometric mean resulting in the following suitability categories [31]:

- <0.5: poor likelihood of presence
- 0.5 – 0.59: below average likelihood of presence
- 0.6 – 0.69: average likelihood of presence
- 0.7 – 0.79: good likelihood of presence
- >0.8: excellent likelihood of presence

- 6.5.2.11 Any water body with a HSI score of 'below average likelihood of presence' or greater is considered to have a reasonable likelihood of GCN presence and has been/will be subject to a further eDNA survey to determine GCN presence or absence.

Great Crested Newt Surveys – Environmental DNA survey

- 6.5.2.12 Water samples from waterbodies scoring above 'below average likelihood of presence' HSI scores were sent off for eDNA analysis. This method (eDNA analysis) was used to assess the presence or likely absence of GCN DNA from a water sample. The survey methodology provides evidence of presence or absence of GCN and has been used as standard practice as approved by Natural England [24] [32]. Water samples for eDNA should be taken between the 15 April and the 30 June as per standard guidelines, eDNA of all ponds were sampled and analysed in accordance with the guidelines.

Bat Activity Surveys

- 6.5.2.13 Activity surveys comprised of three nighttime bat walkover surveys (with one during spring, summer and autumn respectively, as per the BCT guidance [20]), and monthly use of 28 automated bat detectors placed within representative habitats across the Panel Area, set to record bat activity over five consecutive days between May – October 2024 (inclusive). The surveys were not completed in April due to issues with access, but this is unlikely to impact the overall assessment.
- 6.5.2.14 The nighttime bat walkover surveys began at habitat features with the potential to support bats. The surveys covered a range of habitats and features, noting any bat behaviour and species present. The nighttime bat walkover surveys ensured that a range of habitats found across the Panel Areas were sampled relative to bat species/behaviour to indicate importance of habitat features for bats (such as commuting routes).
- 6.5.2.15 The automated detectors were deployed equally between linear and open habitats (simultaneously) across the Panel Areas such that impacts from the construction and installation of the solar PV modules (within open areas) can be directly compared to activity levels at linear habitats, such as hedge lines/streams and woodland edges, which the current proposed plans demonstrate will be retained. Detectors were spread evenly across the Panel Areas and their locations ensured all habitats across the Panel Areas were sampled.

Breeding Birds Surveys

- 6.5.2.16 Breeding bird surveys were undertaken to determine the breeding bird assemblage for the study area. Surveys were carried out between March and July 2024, inclusive. These comprised of a series of six survey visits spread evenly across the five months, with one visit conducted in the evening and an additional dawn survey conducted to offset any limitations to the assessment due to access constraints. All bird species encountered (either visually or through their vocalisations) were recorded onto field maps using adapted British Trust for

Ornithology (BTO) Common Bird Census (CBC) techniques for species codes and behaviour notation.

- 6.5.2.17 Surveys for Nightjar were undertaken to record the presence and distribution of churring males in the Western Panel Area. All other Panel Areas are considered spatially separated from the potential breeding nightjar SPA population. No suitable breeding habitat was identified within the Western Panel Areas, however suitable habitats were identified within the 500m Nightjar Survey Area buffer within the adjacent Breckland SPA. As access was not permitted within the SPA itself, surveys instead included a series of walked transects along the Western Panel Area boundary bordering the SPA. Transects incorporated stopping (listening) points, with each stop lasting approximately 5 minutes.
- 6.5.2.18 Surveys for stone curlew were undertaken in July 2024 based on confidential guidance from the Royal Society for the Protection of Birds (RSPB). The surveys included daytime visits of transect routes which relate to the Panel Areas. The Western Panel Area is the only area of the Proposed Development within the Breckland SPA impact zone, which is a 1.5km primary buffer zone from the edge of the SPA. [33]The 'Stone-curlew Survey Area' therefore only included the Western Panel Area, as well as a 600m buffer from this Site land parcel boundary (where access allowed using public rights of way 'PRoW' and access tracks). Any further incidental sightings of stone curlew were also recorded as part of the breeding bird surveys.
- 6.5.2.19 Full details of the survey methodology can be found in Appendix 6.4 Breeding Bird Survey Report.

Non-Breeding Bird Surveys

- 6.5.2.20 Non-breeding bird surveys (NBBS) were undertaken to determine the winter bird assemblage for the study area. Five surveys were carried out monthly between November 2023- March 2024. NBBS have been completed on the Panel Areas, including a 500m buffer zone, excluding the Western Panel Area which was added at a later date. A further three NBBS have been completed for the Panel Areas, including a 500m buffer zone, between October 2024 and January 2025 and are currently in progress, with these scheduled to finish by March 2025. The findings of the latest NBBS will be reported and considered within the ES. Target Species identified consist of wetland birds such as waders, waterfowl and gulls and Annex 1/Schedule 1 raptors and owls.
- 6.5.2.21 Full details of the survey methodology can be found in Appendix 6.5 Non-Breeding Bird Survey Report.

Badger Survey

- 6.5.2.22 Badger surveys have been undertaken between December 2024 and January 2025, when reduced vegetation enables badger signs to become more apparent. The surveys involved searches for signs of badger presence, including dung pits, latrines, hairs, prints and feeding signs/remains within target habitats of up to 50m. Where possible, the survey has been able to confirm the status of any

recorded setts as active or disused, and classified the sett with respect to its likely function within the social group (main, annex, subsidiary or outlier sett).

Biodiversity Net Gain

- 6.5.2.23 The primary aims of BNG are to secure a measurable improvement in habitat for biodiversity, to minimise biodiversity losses and to help restore ecological networks whilst streamlining development processes.
- 6.5.2.24 A 10% net gain requirement for NSIPs is legislated through the Environment Act 2021 and is expected to become mandatory in November 2025 (subject to additional consultation and regulations) [34].
- 6.5.2.25 Biodiversity metrics provide a measure of overall biodiversity value based on habitat type, area, condition and distinctiveness. The current approved metric is the Statutory Biodiversity Metric [35].
- 6.5.2.26 Biodiversity will be calculated pre and post development for the Panel Areas upon finalisation of design and an associated landscape plan. The change in biodiversity units indicates either a net loss, a net gain or no change in biodiversity.
- 6.5.2.27 A BNG assessment will be prepared for the Proposed Development to describe the expected biodiversity net gain post-development, this will be submitted as part of ES with the DCO application.

6.5.3 Assigning receptor sensitivity

- 6.5.3.1 Where protected species are present, they are considered 'sensitive' features.
- 6.5.3.2 With the exception of such species receiving specific legal protection or those subject to legal control (e.g. invasive species), all ecological features that were determined to be sensitive at negligible level would be scoped out of the assessment at the ES stage. Further, ecological features of local importance, where there was a specific technical justification, will be scoped out of the assessment (as agreed through scoping). This is because a significant effect in EIA terms could not occur and would not influence the decision-making about whether or not consent should be granted for the Proposed Development. This approach is consistent with that described in the CIEEM Guidance [16].
- 6.5.3.3 As the importance of ecological features is determined with regard to the extent of habitat or size of population that may be affected by the Proposed Development, each status can differ from that which would be conferred by legislative protection or identification as a conservation notable species. For example, house sparrow is important at a national level because it is a SPI and features on the Birds of Conservation Concern (BoCC) Red-List. However, a small population that could be affected by a development would be assessed as being of less than national importance due to the national population size, albeit declining (in excess of 5 million pairs). Similarly, a small length of hedgerow, even if deemed to be 'important' with regard to the Hedgerow Regulations, may be considered not of national importance due to the extent of this habitat type across a given county.

- 6.5.3.4 Wherever possible, information regarding the extent and population size, population trends and distribution of the ecological features would be used to inform the categorisation to determine importance at the project level. Where detailed criteria or contextual data are not available, professional judgement would be used to determine importance. The description of each criteria used in this assessment is provided in Table 6-6.

Table 6-6 Importance of Impact of Ecological Features as a Result of the Proposed Development

Geographical context of importance	Criteria Example/ Description
International or European	1. European sites including SPAs, SACs, candidate SACs and Sites of Community Importance (SCI). Potential SPAs (pSPA), possible SACs (pSACs), Ramsar sites (designated under international convention) and proposed Ramsar sites should also be considered in the same manner in accordance with national planning policy. 2. Areas of habitat or populations of species which meet the published selection criteria based on discussions with Natural England and field data collected to inform the assessment for designation as a European site or Ramsar site, but which are not themselves currently designated at this level.
National (United Kingdom)	1. A nationally designated site including SSSIs and National Nature Reserves. 2. Areas (and the populations of species which inhabit them) which meet the published selection criteria guidelines for selection of biological SSSIs but which are not themselves designated based on field data collected to inform the assessment, and in agreement with Natural England. 3. HPI and SPI, Red listed and legally protected species that are not addressed directly in Part 2 of the Guidelines for Selection of Biological SSSIs but can be determined to be of national importance using the principles described in Part 1 of the guidance. 4. Areas of Ancient Woodland e.g. woodland listed within the Ancient Woodland Inventory and ancient and veteran trees.
Regional (East Anglia)	1. Regularly occurring HPI and populations of SPI, Red-listed and legally protected species may be of regional importance in the context of published information on population size and distribution.
County (Norfolk)	1. LNRs and Non-Statutory Designated sites - LWSs designated in the county/metropolitan context. 2. Areas which based on field data collected to inform the Ecological Impact Assessment meet the published selection criteria for those sites listed above (for habitats or species, including those listed in relevant Local Biodiversity Action Plans (BAP) [14]) but which are not themselves designated.
Local (Breckland)	1. HPI and SPI, Red listed and legally protected species that based on their extent, population size, quality etc are determined to be at a lesser level of importance than the geographic contexts above. 2. Common and widespread semi-natural habitats occurring within the study area in proportions greater than may be expected in the local context. 3. Common and widespread native species occurring within the relevant study area in numbers greater than may be expected in the local context.

Geographical context of importance	Criteria Example/ Description
Negligible	1. Common and widespread semi-natural habitats and species that do not occur in levels elevated above those of the surrounding area. 2. Areas of heavily modified or managed land uses (e.g. hard standing used for car parking, as roads etc.)

6.5.4 Assigning magnitude of impact

6.5.4.1 The scale for the magnitude of the environmental change (i.e. impact) as a result of the Proposed Development is described within Table 6-7 and used to provide an understanding of the relative change from the baseline position.

Table 6-7 Magnitude of Change

Scale of Change	Criteria and resultant effect
High	The change permanently (or over the long-term) affects the conservation status of a habitat/species, reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a large area of habitat or large proportion of the wider species population is affected. For designated sites, integrity is compromised. There may be a change in the level of importance of the receptor in the context of the project.
Medium	The change permanently (or over the long term) affects the conservation status of a habitat/species reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a small-medium area of habitat or small-medium proportion of the wider species population is affected. There may be a change in the level of importance of this receptor in the context of the project.
Low	The quality or extent of designated sites or habitats or the sizes of species' populations, experience some small-scale reduction or increase. These changes are likely to be within the range of natural variability and they are not expected to result in any permanent change in the conservation status of the species/habitat or integrity of the designated site. The change is unlikely to modify the evaluation of the receptor in terms of its importance.
Very Low	Although there may be some effects on individuals or parts of a habitat area or designated site, the quality or extent of sites and habitats, or the size of species populations, means that they would experience little or no change. Any changes are also likely to be within the range of natural variability and there would be no short-term or long-term change to conservation status of habitats/species receptors or the integrity of designated sites.
Negligible	A change, the level of which is so low, that it is not discernible on designated sites or habitats or the size of species' populations, or changes that balance each other out over the lifespan of a project and result in a neutral position.

Significance criteria

- 6.5.4.2 Adverse effects are assessed as Significant if the favourable conservation status of an ecological feature would be lost as a result of the Proposed Development. Beneficial effects are assessed as those where a resulting change from the baseline, improves the quality of the environment (e.g. increases species diversity, increases the extent of a particular habitat or halts/slows down an existing decline). For a beneficial effect to be Significant, the conservation status would need to positively increase in-line with a magnitude of change of 'High', as described in Table 6-7, above.
- 6.5.4.3 For each ecological feature, only those characteristics relevant to understanding the ecological effect of the Proposed Development and determining the significance are described. The determination of the significance of effects has been made based on the predicted effect on the structure and function, or conservation status, of relevant ecological features, as follows:
- Not significant - no effect on structure and function, or conservation status.
 - Significant - structure and function, or conservation status is affected.
- 6.5.4.4 Conservation status is defined as follows (as per the CIEEM Guidance [16]):
- “For habitats, conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and function as well as its distribution and typical species within a given geographical area;
 - For species, conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.”
- 6.5.4.5 The decision as to whether the conservation status of an ecological feature would alter is made using professional judgement, drawing upon the information produced through the desk study, field survey and assessment of how each feature is likely to be affected by the Proposed Development.
- 6.5.4.6 A similar procedure is used where designated sites may be affected by the Proposed Development, except that the focus is on the effects on the integrity of each site. The assessment of effects on the integrity of each site draws upon the assessment of effects on the conservation status of the features for which the site has been designated.

Assumptions and limitations

- 6.5.4.7 The information provided in this report is deemed to be correct at the time of writing, however this is subject to change as the application progresses and the Proposed Development is refined.
- 6.5.4.8 Panel Area boundary amendments occurred during some of the surveys which resulted in further surveys needing to be scheduled, these further surveys are still ongoing. With the extra surveys scheduled, it is unlikely to cause a substantial impact to the findings, these will be reported within the ES.

- 6.5.4.9 Some areas were unable to be thoroughly searched at the time of survey due to access constraints or health and safety concerns. These areas were small in proportion to the proposed Panel Areas and as such are not expected to impact the findings of the assessment.
- 6.5.4.10 Weather conditions and access constraints resulted in rescheduling of surveys to ensure species were surveyed within the optimum survey window, as per the relevant guidance. It is therefore unlikely that this re-scheduling of surveys caused any substantial impacts to the findings of this assessment, as the majority of species surveys were completed as per relevant guidelines. The activity surveys for bats were started in May, although this did not impact the night-time bat walkover surveys it did reduce the number of months of static data that could be collected, this is not expected to impact the results as it was possible to gain sufficient data for all remaining months.
- 6.5.4.11 In the absence of complete ecological survey data, a number of assumptions have been made in regard to the potential/likely presence of protected and notable species based on the presence of recent records/desk study data, presence of suitable habitat and known patterns of geographical distribution. This includes GCN due to the survey data being partially complete due to access constraints.
- 6.5.4.12 Further assessment and surveys will be necessary on areas such as within the Cable Corridor, these will be reported in the ES and submitted with the DCO application.

6.6 Baseline conditions

6.6.1 Sensitive receptors

- 6.6.1.1 The sensitive receptors identified and considered in this preliminary assessment are:
- Statutory Designated Sites
 - Non-statutory Designated Sites
 - Priority Habitats (such as hedgerows, ancient woodland, arable fields margins)
 - Ditches, streams and waterbodies
 - Badger
 - Bats
 - GCN and common toad
 - Breeding and Wintering Birds (including Stone curlew, woodlark and nightjar)
 - Reptiles
 - Eurasian otter
 - Water vole
 - Protected and rare invertebrates
 - Protected and rare plants

- Fish (including eels)
- White Clawed Crayfish (*Austropotamobius pallipes*)
- INNS (Species listed on Section 9 of the WCA.

6.6.2 Existing baseline conditions

- 6.6.2.1 A desk study of the draft Order Limits and extended UK Habitats Survey of the Panel Areas undertaken April 2024 – September 2024 have been used to inform the ecological baseline conditions as described in this section.
- 6.6.2.2 The draft Order Limits are located between the towns of Dereham and Swaffham in Norfolk. A larger section of woodland (part of Breckland SPA) runs along part of the eastern boundary of the Western Panel Area. Ancient woodland is present along the boundary of the draft Order Limits. The draft Order Limits are located within National Character Area (NCA) Profile: 84 Mid Norfolk (NE523).
- 6.6.2.3 The location and extent of habitats within the Panel Areas are displayed on Figure 6.6. The Panel Areas are dominated by arable fields, with less frequent fields of grassland, mixed and broadleaved woodlands and plantations and boundary hedgerows. There are 102 waterbodies in total within the Panel Areas and 98 within 100m of the Panel Areas. The River Wissey and Wendling Beck (a tributary of The River Wensum) bisect/are adjacent to the Panel Areas.
- 6.6.2.4 An initial desk study based on aerial maps shows habitat in the Cable Corridors is similar to that within the Panel Areas, i.e dominated by an arable landscape with hedgerows, woodlands and waterbodies. At present, a desk-based assessment has been carried out to indicate those areas along the pre-determined Cable Corridor area of high (red), moderate (amber) and low/negligible (green) ecological risk. These risk areas have been classified by using existing historical data records including for badger setts or locations of Section 41 habitat from aerial imagery or locations of veteran trees, for instance. This has enabled the area for the Cable Corridor to be further refined to avoid, as far as possible, any high ecological risk areas, and enable targeted preliminary baseline assessments to be carried out. Further detail on this will be included within the ES once the PEA and extended UK Habitats Survey of the Cable Corridors has been undertaken.

Designated Sites

- 6.6.2.5 A number of internationally designated sites are present within 10km of the draft Order Limits and their location is shown on Figure 6.2 of this PEIR.
- 6.6.2.6 Broadland Ramsar and The Broads SAC are located more than 10km from the draft Order Limits but due to their sensitivity and possible hydrological connection to watercourses within the ZoI of the draft Order Limits, they are considered further and included in the Table 6-8.

Table 6-8 Internationally Designated sites Considered for Assessment

Site Name	Site location	Summary of feature
Breckland SPA	Immediately south	Breckland SPA is a combined area of multiple SSSIs designated for the significant populations of Stone curlew (<i>Burhinus oedicephalus</i>), Nightjar (<i>Caprimulgus europaeus</i>) and Woodlark (<i>Lullula arborea</i>).
Norfolk Valley Fens SAC	1.7km west	These sites support alkaline fens, one of two sites in East Anglia where this habitat occurs.
Breckland SAC	4.6km south	Inland dunes with open <i>Corynephorus</i> and <i>Agrostis</i> grasslands.
River Wensum SAC	8.2km northeast	The site is the largest chalk river in Norfolk, becoming a tributary of the River Yare. It is included as a feature of water courses of plain to montane levels and supports a number of rare species including white clawed crayfish (<i>Austropotamobius pallipes</i>)
Broadland Ramsar	34km northeast	The site supports a number of rare species and habitats within the biogeographical zone context including Alkaline fens, Calcium-rich spring water-fed fens, Alluvial forests with alder (<i>Alnus glutinosa</i>) and ash (<i>Fraxinus excelsior</i>), woodland on floodplains, Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>), Otter (<i>Lutra lutra</i>) and Fen orchid (<i>Liparis loeselii</i>). The site supports outstanding assemblages of rare plants and invertebrates including nine British Red Data Book plants and 136 British Red Data Book invertebrates.
The Broads SAC	34km east	The site supports a number of rare species and habitats within the biogeographical zone context including hard oligo-mesotrophic waters with benthic vegetation (The Broads is the richest area for charophytes in Britain), natural eutrophic lakes, transition mires and quaking bogs, Calcareous fens, Alkaline fens, Alluvial forests, Molinia meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caerulea</i>), Desmoulin's whorl snail, Fen orchid, Ramshorn snail (<i>Anisus vorticulus</i>) and Otter. Where there are ditches and watercourses within The Broads in areas of fen and drained marshlands, these support relict vegetation of the original Fenland flora, and collectively this site contains one of the richest assemblages of rare and local aquatic species in the UK. The site also has the largest example of calcareous fens in the UK. The Broads is one of two sites selected for Alkaline fens in East Anglia, in eastern England, where a main concentration of lowland fen occurs.

6.6.2.7 The nationally designated sites present within 10km of the draft Order Limits are described in Table 6-9 and their location is shown on Figure 6.2 of this PEIR.

Table 6-9 **Nationally Designated sites within 10km of the draft Order Limits**

Site Name	Site location	Summary of feature
Breckland Forest SSSI	Immediately south-west of the site.	Presence of breeding birds including; nightjar and woodlark. The presence of WCA Schedule 8 plants: wormwood (<i>Artemisia campestris</i>), red-tipped cudweed (<i>Filago lutescens</i>), perennial knawel (<i>Scleranthus perennis</i>), spiked speedwell (<i>Veronica spicata</i>). As well as England red list endangered native mammal, red squirrel (<i>Sciurus vulgaris</i>).
Holly Farm Meadow, Wendling SSSI	500m northeast	Presence of lowland mire grassland and rush pasture, lowland neutral grassland and valley fen.
Honeypot Wood, Wendling SSSI	820m northeast	Presence of broadleaved and yew mixed woodland.
Narborough Railway Embankment SSSI	1.2km northwest	Presence of lowland calcareous grassland, including scrub and invertebrate assemblages associated with open short sward and bare sand and chalk.
Potter & Scarning Fens, East Dereham SSSI	1.7km east	Presence of lowland fen, marsh and swamp, including lowland valley fen. With invertebrate assemblages associated with sphagnum bog, moss & tussock, reed-fen & pools. As well as nationally rare damselfly species including the small red damselfly (<i>Ceriagrion tenellum</i>).
Dereham Rush Meadows SSSI	2.4km northeast	Presence of lowland neutral grassland with sections of wet woodland, lowland wet neutral grassland and floodplain fen.
Castle Acre Common SSSI	3.5km north	Presence of lowland neutral grassland, including lowland floodplain fen.
Bradley Moor SSSI	3.9km north	Presence of lowland fen, marsh and swamp, including lowland valley fen. With invertebrate assemblages associated with lowland grass and rush pastures, moss & tussock, reed-fen & pools.
Wayland Wood, Watton SSSI	4km south	Presence of lowland broadleaved, mixed and yew woodland.
Great Cressingham Fen SSSI	4.2km southwest	Lowland basin fen and lowland neutral grassland present.
River Nar SSSI	4.2km north	Neutral lowland grassland with river supporting habitat including rivers and streams.
Dillington Carr, Gressenhall SSSI	4.5km northwest	Presence of broadleaved mixed and yew woodland, with sections of wet woodland and assemblages of breeding birds associated with lowland open water and woodlands.
Horse Wood, Mileham SSSI	4.6km north	Lowland broadleaved mixed and yew woodland, containing wet woodland.
Potter's Carr Cranworth SSSI	4.8km southeast	Presence of lowland broadleaved, mixed and yew woodland, including wet woodland.
Stanford training Area SSSI	4.8km south	Presence of wet woodland, lowland dry heath, lowland dry acid grassland, lowland calcareous grassland, karst habitats. Presence of invertebrate assemblages associated with grassland and scrub matrix and dragonfly assemblages. Presence of hibernating bats. Mount Epping Barn Pit contains a bat hibernaculum in chalk tunnels and a former lime kiln. The species recorded in the pit include: Daubenton's bat,

Site Name	Site location	Summary of feature
		Natterer's bat, Brown Long-eared bat, Brandt's bat, Whiskered bat, and Barbastelle.
Old Bodney Camp SSSI	5.2km southwest	Presence of fixed dune grassland, lowland calcareous grassland and lowland dry acid grassland. Nationally rare moth species present including lunar yellow underwing (<i>Noctua orbona</i>) and tawny wave (<i>Scopula rubiginata</i>).
Breckland Farmland SSSI	5.3km south	Breeding stone curlew present.
Hooks Well Meadow, Great Cressingham SSSI	5.3km southwest	Lowland fen marsh and swamp in favourable condition.
Mattishall Moor SSSI	5.5km west	Presence of fen, marsh and lowland swamp, with lowland valley fen.
East Walton and Adcock SSSI	5.5km northwest	Presence of lowland calcareous grassland, including lowland neutral grassland, lowland mire grassland and rush pasture, lowland calcareous grassland, lowland floodplain fen and lowland basin fen. Invertebrate assemblages associated with moss & tussock fen and populations of Desmoulin's whorl snail and slender green feather moss (<i>Hamatocoulis vernicosus</i>).
Beetley & Hoe Meadows SSSI	5.9km northeast	Presence of valley fen, lowland neutral grassland, lowland mire grassland and rush pasture and lowland dry acid grassland.
Thompson water, Carr and Common SSSI	6.8km south	Presence of lowland calcareous grassland with GCN, associated invertebrate assemblages and assemblages of lowland open water breeding birds.
Rosie Curstons Meadow, Mattishall SSSI	7km west	Favourable condition lowland neutral grassland.
Boughton fen SSSI	7.1km southwest	Presence of fen, marsh and swamp, including lowland floodplain fen.
Field Barn Heaths, Hilborough SSSI	7.1km southwest	Lowland calcareous grassland.
Scoulton Mere (SSSI)	7.3km east	Presence of lowland fen marsh, swamp and mixed woodland. With a population of red data book plant species crested buckler-fern (<i>Dryopteris cristata</i>).
Foulton Common SSSI	7.4km southwest	Presence of wet woodland, valley fen, lowland calcareous grassland; and invert assemblages associated with reed-fen & pools, moss & tussock fens and undisturbed fluctuating fens.
Gooderstone Warren SSSI	7.6km southwest	Presence of breeding stone curlew, fixed dune grassland, lowland calcareous grassland and lowland dry acid grassland.
East Winch Common SSSI	7.9km northwest	Presence of lowland dwarf shrub heath, including lowland dry heath and lowland wet heath.
River Wensum SSSI	8.2km northeast	Rivers and streams containing white-clawed crayfish (<i>Austopotamobius pallipes</i>), populations of mollusc Desmoulin's whorl snail (<i>Vertigo moulinsiana</i>), bullhead (<i>Cottus gobio</i>) and brook lamprey (<i>Lampetra planeri</i>).

Site Name	Site location	Summary of feature
Coston fen Runhall SSSI	9.4km southwest	Presence of lowland fen, marsh and swamp, including lowland valley fen and mire grassland.
Cranberry Rough Hockham SSSI	9.5km south	Presence of lowland fen marsh and swamp, including floodplain fen, wet woodland, basin fen with associated plant assemblages.

6.6.2.8 The locally designated sites within 2km of the draft Order Limits are described in Table 6-10 (shown in Figure 6.3 of this report) and included in the assessment if they occur within 2km of the draft Order Limits and meet one or more of the following criteria for potentially being affected:

- Occur within 500m of the draft Order Limits.
- Are strongly connected by habitat to the draft Order Limits (e.g. by a river or continuous woodland).
- Are cited for particularly mobile species such as birds, bats or highly mobile invertebrates (e.g. from Lepidoptera, Hymenoptera and Odonata).

Table 6-10 Non-Statutory Designated sites within 2km of the draft Order Limits

Site Name	Site location	Summary of feature
Necton Wood	Adjacent to the Northern Panel Area (centred on British National Grid Reference: TF90221080);	Ancient woodland
Sporle Wood	Immediately north of the Central Panel Area	Ancient woodland
Great Wood	Adjacent to the Northern Panel Area (centred on British National Grid Reference: TF91401023);	Ancient woodland
High Grove	Adjacent to the Southern Panel Area (centred on British National Grid Reference: TF92150710).	Ancient woodland
Church Farm Meadow (County Wildlife Site (CWS) REF 1011)	Located 380m east of the Northern Panel Area	Diverse grassland area hydrologically connected to the proposed panel area.
Wendling Carr (CWS REF 1013)	Located 1km northeast of the Eastern Panel Area	Damp grassland area
Smeeth Wood & Devil's Dyke (CWS REF 884)	Adjacent to the Western Panel Area	Wet Woodland
Disused Railway (CWS REF 718)	Located within the Southern Panel Area	Line of trees and scrub as part of the disused railway.
Land Northeast of Woodbottom (CWS REF 716)	Located 1.1km from the Southern Panel Area	Woodland
Saham Wood (CWS REF 714)	Located 1km from the Southern Panel Area	Woodland

Habitats

Habitats of Principal Importance (HPI)

6.6.2.9 The desk study identified several types of HPI present within 2 km of the draft Order Limits. These are listed, below, and illustrated on Figure 6.5 of this PEIR:

- Deciduous woodland
- Chalk rivers
- Standing open water
- Coastal and floodplain grazing marsh
- Arable field margins
- Native hedgerows
- Lowland calcareous grassland
- Good quality semi-improved grassland
- Lowland calcareous grassland
- Lowland dry acid grassland
- Lowland fens
- Lowland heathland
- Lowland meadows
- Reedbeds
- Traditional orchard

6.6.2.10 HPI confirmed to occur within Panel Areas as a result of the UK Habitats Survey include:

- Deciduous woodland
- Standing open water
- Arable field margins
- River – Wendling Beck and River Wissey
- Native hedgerows.

Habitats within the Panel Areas

6.6.2.11 A detailed description of the habitats found within the Panel Areas can be found within the PEA in Appendix 6.1. To summarise the habitats found as a result of the UKHAB surveys within the Panel Areas include:

- Woodland - Small areas of woodland containing broadleaved species are scattered throughout the Panel Areas. The woods are a mix of semi-natural and recent plantations. A number of woodland types were recorded including: w1g - Other broadleaved woodland, w1h - Other woodland; mixed, w1f - Lowland mixed deciduous woodland, w2b - Other Scot's pine woodland and w1d - Wet woodland.

- Scrub - There are a number of small areas of dense scrub throughout the Panel Areas with short lengths of continuous scrub bordering field margins. A number of scrub types were recorded including: h3 - Dense scrub, h3d - Bramble scrub, h3h - Mixed scrub, h3a - Blackthorn scrub and h3f - Hawthorn scrub.
- Grassland – There are a number of grassland fields, primarily grazing fields of a shorter structure but some with a more varied tussocky structure. A number of grassland types were recorded including: g3c - Other neutral grassland, g3a - Lowland meadows and g4 - Modified grassland.
- Standing Water - 200 ponds in total were found in the Panel Areas and within 100m of the Panel Areas. These support plant species such as watercress *Rorippa nasturtium-aquaticum* agg. and sedges *Carex* spp. The majority of these fall into the habitat classification r1a - Eutrophic standing waters, see Figure 6.1.
- Running Water – Two chalk streams (Wendling Beck and River Wissey) are within or immediately adjacent to the Panel Areas. Water-filled ditches were found throughout the Panel Areas.
- Arable Land and Game Cover Crop - This is the predominant land use within the Panel Areas. Crops noted at the time of survey mostly consisted of cereal crops; due to crop rotation the crop present in any field may change from year to year. Many of the fields had margins with a more diverse range of plant species.
- Bare Ground - As well as in farmyards, there are expanses of bare ground to form tracks, where the earth has been routinely compacted by farm machinery use.
- Hedgerows - There are many hedgerows present across the draft Order Limits, with some containing mature trees. Hedgerows found across the Pannel Area include: h2a -Native hedgerow, h2b - Non-native and ornamental hedgerow, h2a5 - Species-rich native hedgerow and h2a6 - Other native hedgerow.

Habitats within the Cable Corridor Areas

- 6.6.2.12 The Cable Corridor has a similar habitat structure to that of the Panel Areas, with the landscape being dominated by arable land with occasional hedgerows, treelines, waterbodies and watercourses.

Protected and notable species

- 6.6.2.13 Table 6-11 presents a summary of protected or notable animal species that have been identified as present, or potentially present, within the Panel Areas. Full details of each feature and their respective survey area is provided in an associated Appendices 6.1-6.5. The scope of these surveys has been agreed through the EIA scoping process and engagement with relevant stakeholders.

Table 6-11 Locally Recorded Protected Species potentially within ZOI

Species	Summary of potential for species to occur within ZOI	Species protection
Great crested newts (<i>Triturus cristatus</i>);	All 200 waterbodies identified inside and within the 100m buffer from the Panel Areas have the potential to support GCN. Natural England District Level Licence (DLL) mapping for the Panel Areas also suggests likely presence given that the Panel Areas mostly lie within their 'Amber' zone, defined as "...amber zones have GCN populations, habitats and dispersal routes". There are 86 records of GCN returned from the NBIS data search. HSI assessments have been undertaken on waterbodies within 100m of the draft Order Limits where access was available. To date 115 waterbodies have been HSI surveyed resulting in 91 waterbodies which are within the threshold for further eDNA surveys. Further surveys on remaining waterbodies are required to assess their potential for GCN. eDNA surveys were undertaken on waterbodies within the threshold (where access was available, and they still held water). Results of the eDNA surveys so far resulted in 11 waterbodies with positive GCN results, confirming presence within these ponds. The locations of the waterbodies which were surveyed for HSI and eDNA results will be provided in the ES. Suitable breeding waterbodies will likely be present within the cabling route options which have not been assessed or eDNA sampled to date, as such the requirement for surveys will be confirmed from the findings of the PEA and subsequent HSI's of any ponds where there is suitable access.	European protected species
Badgers (<i>Meles meles</i>);	The data search returned recent records of badgers within 2km of the Proposed Development, including setts and badgers that have been killed on roads. The habitat composition of the Panel Areas, including an arable landscape with hedgerows, woodland, scrub, ditches and waterbodies provide suitable habitat for badgers.	The Protection of Badgers Act

Species	Summary of potential for species to occur within ZOI	Species protection
	[REDACTED] [REDACTED] [REDACTED] [REDACTED]. Full details of survey results including the survey areas and location/ type of setts found will be detailed in confidential parts of the ES.	
Bats	A number of mature trees within the draft Order Limits may provide roosting opportunities for bats. At present, roost surveys are not proposed to be undertaken given the assumed embedded mitigation, including avoidance of mature trees and the retention of a 5m buffer, within the project. Should plans change and any mature trees likely to be impacted these will require further surveys. Furthermore, no buildings will be altered or illuminated by the Proposed Development. Woodlands and hedgerows located within the ZOI provide potential habitat for foraging and commuting bats. The desk study data provided by NBIS also suggests the potential presence locally of serotine (<i>Eptesicus serotinus</i>) and Leisler's bat (<i>Nyctalus leisleri</i>). There are over 3,000 records of bats within the data search area, the majority of which are pipistrelle species with other species such as noctule and brown long-eared bats frequently recorded. The bat activity surveys across the Panel Areas have found a number of bat species utilising habitats for foraging and commuting. Spring, summer and autumn nighttime bat walkover surveys returned activity from common pipistrelle (<i>Pipistrellus pipistrellus</i>), soprano pipistrelle (<i>Pipistrellus pygmaeus</i>), noctule (<i>Nyctalus noctule</i>), <i>Myotis</i> spp., brown long-eared bat (<i>Plecotus auratus</i>), barbastelle (<i>Barbastella barbastellus</i>), serotine, Nathusius' pipistrelle <i>Pipistrellus nathusii</i> and Leisler's bat. Activity was highest around areas of woodland and hedgerows with strong connectivity to surrounding habitat. A full summary of bat species and locations of peak activity across the Panel Areas will be provided with the ES. The automated bat detector surveys recorded a range of species using the Panel Areas. The volume of calls was higher around habitats such as woodland and waterbodies compared to habitat such as arable fields. Species recorded by the detectors included: common pipistrelle, soprano pipistrelle, noctule, <i>Myotis</i> spp., brown long-eared bat, barbastelle, serotine, Nathusius' pipistrelle, and Leisler's bat. A full summary of static locations and species recorded across the Panel Areas will be provided with the ES.	European protected species
Reptiles	There are records of grass snake (<i>Natrix helvetica</i>) and slow worm (<i>Anguis fragilis</i>) within the vicinity of the draft Order Limits. There are records of Adder (<i>Vipera berus</i>) within Norfolk, but no records of adder within 5km of the draft Order Limits.	Protected under the WCA

Species	Summary of potential for species to occur within ZOI	Species protection
	The Panel Areas are predominantly arable which is of poor suitability for reptiles, but there are a number of hedgerows, woodlands, grasslands and scrub areas within the interiors of the Panel areas and adjacent to the draft Order Limits and small proportion within the draft Order Limits. Grass snake can traverse arable landscape, especially along hedgerows, grassy strips and water features, that connect to better habitat. They are likely be present in low density across the draft Order Limits where there is suitable habitat. Grass snakes are often found near waterbodies – of which there are a number across the draft Order Limits. It is conceivable that other species of reptiles such as common lizard (<i>Zootoca vivipara</i>) could occasionally be present within the draft Order Limits in low numbers in areas of rough grassland, tall herb and scrub although as per the UK Habitat Survey results these habitats are limited within the Panel Areas. Therefore, the Panel Areas would only support low numbers of reptiles overall, no further surveys for reptiles would therefore be required, see section 6.7 for mitigation proposed for these works.	
Nesting birds	All nesting birds are protected. The draft Order Limits offers suitable nesting habitat such as hedgerows, scrub, woodland and waterbodies for a number of farmland SPI bird species. There is also arable open landscape which is potentially suitable for ground nesting birds. A total of 58 species were recorded breeding within those areas of the Panel Area subject to a breeding bird survey, this included 32 Notable Species. The results of the breeding bird survey included: A total of 12 Red List species A total of 16 Amber List species A total of 16 listed as rare and most threatened species under Section 41 (S41) of the NERC Act (2006) and, Eight species listed under the Norfolk Local Biodiversity Action Plan (LBAP). Five Schedule 1 species (WCA 1981) Breeding bird survey results are summarised in Appendix 6.4. Bird species are further discussed in Table 6-12 below.	All nests/ eggs protected by WCA

Species	Summary of potential for species to occur within ZOI	Species protection
Wintering birds	Within the 2023-2024 survey period, a total of 15 Target Species were recorded within the Panel Areas, with a further five Target Species flying over the Panel Areas only, and 18 Target Species recorded within the Wider Survey Area, with a further four Target Species flying over the Wider Survey Area only. The 2024-2025 survey has been completed in March 2025, current totals from the three surveys completed between October 2024 and January 2025 consist of 12 Target Species within Panel Areas, with a further five target species flying over the Panel Areas only, and 11 Target Species within the Wider Survey Area, with a further two Target Species flying overhead only. These findings and full report will be available with the ES. Non-breeding bird surveys to date are summarised in Appendix 6.5.	Protected under the WCA
Riparian mammals - Otter and water voles (<i>Arvicola amphibius</i>)	There are 19 records of otter within 2km of the draft Order Limits During the riparian mammal surveys, otter signs (spraint and likely otter slide) were found on the Wendling Beck in the Northern Panel Areas. A small number of other minor watercourses within the draft Order Limits have low suitability habitat for otters, although no signs of otters were found on these watercourses, they may occasionally be used by transient individuals. There are 14 water vole records within 2km of the draft Order limits. During the riparian mammal surveys, a water vole was recorded on Wendling Beck, along with a number of signs including droppings and burrows. A number of likely signs including burrows and feeding remains were also recorded along the River Wissey. Watercourses within the Cable Corridor route options have not been assessed for riparian mammals and will be assessed as part of the PEA surveys.	Protected under the WCA
Small mammals including hedgehog and brown hare	There are a number of records of mammals such as hedgehog (<i>Erinaceus europaeus</i>) and brown hare (<i>Lepus europaeus</i>) within 2km of the draft Order Limits. Suitable habitat for mammals including hedgehog and brown hare and for other mammals such as harvest mouse (<i>Micromys minutus</i>) and polecats (<i>Mustela putorius</i>) can be found across the draft Order Limits. It should be noted that no records of hazel dormouse have been provided by the NBIS data search, and they are not considered to be within the vicinity of the draft Order Limits.	Partial protection under WCA and NERC Act depending on species
Red Data Book and priority species invertebrates	There is habitat within the Panel Areas suitable for invertebrates. Veteran trees may support Red Data Book and priority saproxylic invertebrate species. Hedgerows may support priority invertebrate species and provide supporting habitat for Red Data Book saproxylic invertebrate species.	Partial Protection under WCA and NERC Act depending on species

Species	Summary of potential for species to occur within ZOI	Species protection
	Records of invertebrates within 2km of the draft Order Limits include but are not limited to: Breckland Leatherbug (<i>Arenocoris waltlii</i>) and Small Egger (<i>Eriogaster lanestris</i>). Breckland Leatherbug is found in dry, sandy habitats often in areas that have low-growing vegetation and sparse cover within heathland (heathland has not been found within the Panel Areas). Small Egger is found in hedgerows and scrub.	
Fish	There are a number of watercourses which provide suitable habitat for fish and are within or adjacent to the Panel Areas. A number of records of fish have been indicated by the data search including records for Bullhead <i>Cottus gobio</i> , European eel (<i>Anguilla anguilla</i>) (note these records are more than 20 years old), and Brown Trout <i>Salmo trutta</i> , recorded using the River Wissey. There are also records of freshwater fish using the River Wissey provided by the EA.	Partial Protection WCA and NERC Act depending on species
Protected and Notable Plants	There are records of orchids (<i>Ophrys</i>) and Bluebells (<i>Hyacinthoides non-scripta</i>) within the data search area. During the baseline surveys, a number of bee orchid (<i>Ophrys apifera</i>) were found within the Panel Areas.	Partial protection under Section 13 of the WCA depending on species
Invasive Non-Native Species	There are records of INNS within 2km of the draft Order limits including plants such as Himalayan Balsam (<i>Impatiens glandulifera</i>) and Japanese knotweed (<i>Fallopia japonica</i>) (although the majority of these records are not within the last 10 years). No INNS listed on Schedule 9 were observed during the extended UK Habitat Survey of the Panel Areas.	N/A

Table 6-12 Locally Recorded Important Bird Species potentially within 2km ZOI

Species	Summary of potential for species within 2km of the draft Order Limits	Species protection
Stone curlew	Favour open sandy/stoney land including arable land for nesting as found in areas of the draft Order Limits, especially the Western, Southern and Central Panel Areas. Records of nests have been found within 2km of the Western and Southern Panel Areas within the draft Order Limits.	Schedule 1
Barn owl (<i>Tyto alba</i>)	Mature trees and nearby agricultural buildings offer nesting potential. There are records of barn owl within 2km of draft Order Limits.	Schedule 1
Lapwing (<i>Vanellus vanellus</i>)	Lapwing require open grassland or arable land for nesting. Arable habitat present across the draft Order Limits. There are records of lapwing within 2km of draft Order Limits.	Schedule 1

Species	Summary of potential for species within 2km of the draft Order Limits	Species protection
Corn bunting (<i>Emberiza calandra</i>)	Corn bunting are ground-nesting birds favour arable farmland with scattered trees and hedgerows. There are records of corn bunting within 2km of draft Order Limits.	Schedule 1
Farmland bird species especially Skylark (<i>Alauda arvensis</i>)	Skylark require open grassland or arable land for nesting. Arable habitat present across the draft Order Limits. Other species largely associated with hedgerows and rough grassland. There are records of skylark within 2km of draft Order Limits and a number of nesting skylark were noted during the PEA of the Panel Areas.	NERC Act
Woodlark	Woodlark require areas of mosaic or rotational woodland for nesting. This habitat is present immediately adjacent to the draft Order Limits.	Schedule 1
Nightjar	Nightjar require areas of mosaic or rotational woodland for nesting. This habitat is present immediately adjacent to the draft Order Limits.	Schedule 1

6.6.3 Sensitive Ecological Receptors Summary

- 6.6.3.1 A summary of the sensitive ecological features, their importance in the context of the Proposed Development and justification for scoping in or out of further assessment is given in Table 6-13.

Table 6-13 Sensitive Ecological Receptors Summary

Ecological Feature	Summary of Features	Importance: Legislation/ policy	Importance: Proposed Development (estimated)	Justification for importance to Proposed Development
Breckland (SPA) and Breckland (SSSI)	Breckland SPA is a combined area of multiple SSSIs designated for the significant population of Stone curlew, Nightjar and Woodlark.	European	National	Breckland SPA (located immediately adjacent to the Western Panel Area) is designated in accordance with EC Birds Directive. Qualifying feature stone curlew have been found nesting within ZoI and given the foraging resource available, Breckland SPA and the Western Panel Area are potentially functionally linked.
Breckland Forest (SSSI)	Presence of breeding birds including nightjar and woodlark.	National	National	Breckland Forest (located immediately adjacent to the Western Panel Area) is designated in accordance with the WCA and has significant populations of nightjars and woodlarks which could be disturbed or displaced as a result of the Proposed Development.
Holly Farm Meadow, Wendling (SSSI)	Presence of lowland mire grassland and rush pasture, lowland neutral grassland and valley fen.	National	County	Holly Farm Meadow is designated in accordance with the WCA. The SSSI is located within 500m of the draft Order Limits. The SSSI is hydrologically connected to the draft Order Limits
Norfolk Valley Fens (SAC)	Support alkaline fens.	International	County	Norfolk Valley Fens is designated in accordance with the EC habitats directive. The SAC is located within 2km of the draft Order Limits. The SAC is hydrologically connected to the draft Order Limits and is sensitive to pollution.
Potter & Scarning Fens, East Dereham (SSSI)	Presence of lowland fen, marsh and swamp, including lowland valley fen, supporting invertebrate assemblages.	National	County	Potter & Scarning Fens is designated in accordance with the WCA. The SSSI is located within 2km of the draft Order Limits. The SSSI is hydrologically connected to the draft Order Limits and is sensitive to pollution.
Dereham Rush Meadows (SSSI)	Presence of lowland neutral grassland with sections of wet woodland, lowland wet neutral grassland and floodplain fen.	National	County	Dereham Rush Meadows is designated in accordance with the WCA. The SSSI is located within 3km of the draft Order Limits and immediately adjacent to the A47, a main transport link to the Panel Areas. The

Ecological Feature	Summary of Features	Importance: Legislation/ policy	Importance: Proposed Development (estimated)	Justification for importance to Proposed Development
				SSSI is sensitive to pollution and could be affected by airborne contaminants.
Stanford Training Area (SSSI)	Presence of wet woodland, lowland dry heath, lowland dry acid grassland, lowland calcareous grassland, karst habitats. Presence of hibernating bats at Mount Epping Barn Pit.	National	Local	Stanford Training Area is located within 5km of the Proposed Development and is designated in accordance with the WCA. As bats are included as qualifying features and there is some overlap in the species of bat recorded across the draft Order Limits, there is potential that the SSSI and the draft Order Limits are functionally linked by these species.
The Broads (SAC)	The site supports a number of rare aquatic and riparian species and habitats within the biogeographical zone context.	International	Local	The Broads is designated in accordance with the EC Habitats Directive. The SAC is located 34km from the draft Order Limits, which given the distance will not be affected by the hydrological link.
Broadland (RAMSAR)	The site supports a number of rare aquatic and riparian species and habitats within the biogeographical zone context.	International	Local	Broadland is designated under the Ramsar convention as a Wetland of International Importance. Broadland RAMSAR is located 34km from the draft Order Limits, which given the distance will not be affected by the hydrological link.
Ancient woodland	Four ancient woodlands designated as CWS within the ZoI: Sporle Wood, Necton Wood, Great Wood and High Grove	County	County	These sites are designated under the criteria outlined within the Norfolk Local Sites Handbook of the Norfolk Biodiversity Partnership (2018) [36] as CWS with their own local protection. Given the close proximity of the woodland to the Site, there is potential for airborne contaminants.
Disused Railway CWS	CWS REF 718	County	County	The site is designated under the criteria outlined by the under the criteria outlined by the CWS under the criteria outlined by the Norfolk Local Sites Handbook of the Norfolk Biodiversity Partnership (2018).

Ecological Feature	Summary of Features	Importance: Legislation/ policy	Importance: Proposed Development (estimated)	Justification for importance to Proposed Development
				Given the close proximity of the CWS to the draft Order Limits, there is potential for airborne contaminants. The site is located within the draft Order Limits.
County Wildlife Sites	(Church Farm Meadow and Wendling Carr hydrological connected) Smeeth Wood & Devil's Dyke (CWS REF 884) Disused Railway (CWS REF 718) Land Northeast of Woodbottom (CWS REF 716) Saham Wood (CWS REF 714), are all located within close proximity/ have connecting habitat to the Site	County	County	The sites are designated under the criteria outlined by the CWS under the criteria outlined by the Norfolk Local Sites Handbook of the Norfolk Biodiversity Partnership (2018). Given the close proximity or connectivity of the CWS to the draft Order Limits, there is potential for airborne contaminants and some CWS are hydrologically connected.
Deciduous woodland	A number of deciduous woodlands within 1km of the Site.	National	Local	This habitat qualifies as an HPI. The habitat recorded by the desk study within the ZoI as deciduous woodland is all sufficiently located from the draft Order Limits. There are a number of broadleaved woodlands within the Site but these are relatively uniform in structure and do not meet the CWS criteria as set by the Norfolk Local Sites Handbook of the Norfolk Biodiversity Partnership (2018), as such the woodlands are of no more than Local importance.
Chalk rivers	Two chalk streams immediately adjacent or within Panel Area, further chalk rivers within ZoI.	National	County	Chalk rivers are sensitive to pollution and although fairly common in Norfolk (Natural England, (based on Environment Agency River Network, 2021 [37])), this habitat is rare globally. Chalk rivers can qualify as CWS through EA recommendations and under the

Ecological Feature	Summary of Features	Importance: Legislation/ policy	Importance: Proposed Development (estimated)	Justification for importance to Proposed Development
				criteria outlined by the Norfolk Local Sites Handbook of the Norfolk Biodiversity Partnership (2018).
Standing open water –	There are 102 waterbodies located within the Panel Areas and further waterbodies within the ZoI.	National	County	This habitat qualifies as an HPI. As there are waterbodies within the draft Order Limits and many of the waterbodies outside the draft Order Limits are hydrologically linked, they are up to county importance.
Hedgerows	A number of hedgerows are present throughout the Site including: h2a -Native hedgerow, h2b - Non-native and ornamental hedgerow, h2a5 - Species-rich native hedgerow and h2a6 - Other native hedgerow	National	Local	This habitat can qualify as an HPI. These hedgerows do not meet the criteria for CWS under the criteria outlined by the Norfolk Local Sites Handbook of the Norfolk Biodiversity Partnership (2018) and therefore are no more than local importance.
Grassland (Other Neutral g3c)	Multiple fields of Other neutral grassland across the Site	National	Local	Grassland within the Panel Areas does not meet the criteria for CWS under the criteria outlined by the Norfolk Local Sites Handbook of the Norfolk Biodiversity Partnership (2018) and therefore are no more than local importance.
Great crested newts	There are a number of waterbodies located within the Panel Areas and within the ZoI. A total of 11 waterbodies to date have been found positive for GCN.	European	County	There is presence of GCN in 11 waterbodies within 100m of the Panel Areas. Population sizes are not known but given the lack of suitable habitat with the Panel Areas there is expected to be no more than a County level importance.
Badgers	Arable landscape with hedgerows, woodland and waterbodies provides suitable habitat for badgers.	National	Local	Badgers are generally considered widespread across arable landscape and therefore no more than a local importance.

Ecological Feature	Summary of Features	Importance: Legislation/ policy	Importance: Proposed Development (estimated)	Justification for importance to Proposed Development
	Badgers have been using the Site.			
Bats: Roosting	A number of mature trees on Site which may provide roosting opportunities for bats.	European	County	Trees in the draft Order Limits offer suitable features for roosting bats and may support some rarer species of bats and/or a maternity roost and are therefore up to a county level importance (in accordance with Wray <i>et al.</i> 2010 [38]).
Bats: Commuting and foraging	Woodlands and hedgerows provide habitat for foraging and commuting bats. A range of species was recorded using the Site features across the Site for foraging and commuting.	European	County	Small numbers of rarest species of bats (barbastelle) were found in the Panel Areas (in accordance with Wray <i>et al.</i> 2010 [38]). Other bat species also recorded foraging and commuting across the Panel Areas, especially using features such as hedgerows and woodlands. In accordance with Wray <i>et al.</i> 2010 [38], bats using the Site are up to a county level importance.
Reptiles	A number of records of common reptiles such as grass snake and common lizard were returned by the data search. There is minimal suitable habitat within the Site.	National	Negligible (but legally protected)	Small numbers of reptile species have been found in the vicinity of the draft Order Limits (as per the data search). In accordance with Froglife [39]), the land within the draft Order Limits does not meet the criteria for a Key Reptile Site and given the lack of records and suitable habitat, this indicates a negligible importance.
Wintering birds	Within the survey period, a total of 15 Target Species were recorded within the Site and 18 Target Species within the Wider Survey Area.	International	Local	As per Fuller [40], the current total of non-breeding birds is at a local level.
Nesting birds	The Site offers suitable habitat for nesting including arable open landscape for ground nesting birds. A	National	County	All bird species are protected under the WCA. A total of 58 bird species were recorded breeding within the Panel Areas, indicating a County level importance (Fuller, 1980).

Ecological Feature	Summary of Features	Importance: Legislation/ policy	Importance: Proposed Development (estimated)	Justification for importance to Proposed Development
	variety of other nesting opportunities for birds including hedgerows, scrub, woodlands and waterbodies. A total of 58 species were recorded breeding within the target survey area. Of these, 32 are considered notable species.			
Otters	Signs of otter found on Wendling Beck and records within ZoI.	European	Local (and legally protected)	As per the Environment Agency led National Otter survey in 2010, otters were found to be using most watercourses across the catchment and are generally widespread across Norfolk, indicating a local level importance (Environment Agency, 2010 [41]).
Water voles	Signs/ sighting of water voles within Wendling Beck and River Wissey	National	Local (and legally protected)	As per The Wildlife Trust led National Water Vole Database Project, water voles were found to be using most watercourses across the catchment and are generally widespread across Norfolk (records from 2013-2022), indicating a local level importance [42].
Fish	Suitable habitat and records for fish including eels within and adjacent to the Site. Records of fish species including eels have been found on watercourses within the Pannel Areas.	National	Local	European eel is a SPI and is afforded protection under the Eel Regulations. Record of European eel has been found within the proximity to the draft Order Limits (recorded in River Wissey). There are also wider records of eel across Norfolk [43] indicating a local level importance.
Small mammals including hedgehog and brown hare	Suitable habitat and records for mammals including hedgehog and brown hare.	Local	Local	Hares are generally considered widespread across Norfolk [44] indicating a local level importance. Hedgehogs are widespread across Norfolk [45], they are no more than local level importance.

Ecological Feature	Summary of Features	Importance: Legislation/ policy	Importance: Proposed Development (estimated)	Justification for importance to Proposed Development
Red Data Book and priority species invertebrates	Hedgerows may support priority invertebrate species and provide supporting habitat.	National	Local	Small areas of habitat of greater value to terrestrial invertebrates. Notable species recorded on the within the vicinity of the Panel Areas. Given the records are within the vicinity and are mostly related to habitats not found in great quantity within the Panel Areas it is considered the invertebrate assemblage is no more than a local level importance.
Stone curlew	Records of nests have been found within 2km of the western and southern sections of the draft Order Limits.	National	County	Stone Curlew are an SPI. Habitats found within the Panel Area offer suitable foraging and nesting habitat. As such this indicates a county level importance.
Farmland bird species especially Skylark	Species such a skylark and lapwing recorded on site and require open grassland or arable land for nesting. Other species largely associated with hedgerows and rough grassland.	National	County	Ground nesting birds are protected and these species have been recorded using the arable habitat across the Panel Area. Within Norfolk this habitat is widely available indicating a county level importance.

6.6.4 Future baseline

- 6.6.4.1 The future baseline conditions for biodiversity are expected to remain as the current existing baseline in the absence of the Proposed Development proceeding, due to them being dominated by relatively stable management practices (predominantly arable agriculture). Therefore, it is unlikely that the habitat within the draft Order Limits would materially change in terms of its composition or function (in relation to the ecological features it supports) in the absence of the Proposed Development, and so it is considered appropriate to rely upon the current baseline conditions and information to inform this assessment. It is anticipated that the protected and SPI species baseline would be subject to ongoing fluctuations in-line with shifting population distribution associated with a range of factors including climate change.
- 6.6.4.2 In accordance with the methodology set out in Chapter 15 Cumulative Effects Assessment of this PEIR, the following developments are relevant to this assessment and have been considered present in the future baseline:
- Norfolk Vanguard (EN010079)
 - Norfolk Boreas (EN010087)
 - East Bilney Quarry (FUL/2023/0030 / C/3/2010/3028)
 - Land to South of Field Lane (FUL/2023/0029)
 - East Bilney Quarry (FUL/2023/0031)
 - Land South of B1108 (FUL/2024/0041 / FUL/2020/0050)
 - Dudgeon Onshore Substation (3PL/2012/0703/F)
 - Land to the South of Lynn Road (FUL/2023/0047)

6.7 Design Principles, Embedded and good practice measures

6.7.1 Design Principles

- 6.7.1.1 The Proposed Development is being designed with regard to a set of design principles, as described in the draft Design Approach Document (DAD).

6.7.2 Embedded and good practice measures

- 6.7.2.1 Embedded measures are modifications to the design of a scheme, made during the pre-application phase, that are an inherent part of the design and do not require additional action to be taken. Good practice measures are standard approaches and actions undertaken to avoid or reduce environmental impacts in line with best practice guidance and legislative requirements.

- 6.7.2.2 The Proposed Development is currently evolving through an iterative design process. Measures for the Proposed Development relevant to biodiversity already committed to include:

Buffers and offsets

- 6.7.2.3 Buffers and offsets relate to construction exclusions zones ensuring no permanent structures or works are carried out within these areas. The buffers in place for the Proposed Development include:

- Minimum 5m buffer will be applied between solar PV modules and hedgerows. Additional buffers or appropriate working methods will be employed in respect of Root Protection Areas and trees with suitability for bats.
- Minimum 9m offset from all infrastructure (including fencing) from bank top of all riparian boundaries and watercourses with the exception of watercourse crossings.

Construction activities

- 6.7.2.4 The construction compounds will be located outside of NERC s.41 Priority habitat. Construction activities would take place between:

- 07.00 – 19.00 Monday to Friday,
- 07.00 – 13.00 Saturday

- 6.7.2.5 No works, including site deliveries and collections, will take place outside of these hours, or on Sundays or Bank/Public Holidays unless necessary and agreed with Breckland Council. This will reduce impacts to foraging/commuting bats which will not be subject to lighting impacts other than for a short period potentially during spring/autumn when bat activity at dusk may overlap with end of day and start of day working.

- 6.7.2.6 Where practical, vegetation clearance will be undertaken at an appropriate time of year, outside of the breeding season for birds. Therefore, construction will seek to avoid the nesting bird period i.e. March to August (inclusive) for any vegetation which is suitable for breeding birds (including grassland for ground nesting birds and woody vegetation).

- 6.7.2.7 Where vegetation clearance is not practical outside the nesting bird period, habitats will be checked for the presence of any nests by a suitably qualified ornithologist, prior to vegetation removal, and if active nests are found, then appropriate buffer zones would be put in place and the area monitored until the young birds have fledged.

- 6.7.2.8 Fencing is due to be implemented during construction. For areas which provide habitat for ground nesting birds, secure fencing will make sure the area is protected from predators. Fencing in certain areas to be designed to let small mammals pass through (excluding that around the on-site 132 kV substations).

- 6.7.2.9 Maintenance and other site vehicles will be subject to a 10mph speed restriction throughout all stages of the Proposed Development.
- 6.7.2.10 New crossings of watercourses should be avoided insofar as reasonably practicable, with a preference to reuse existing crossing points and structures wherever possible. Appropriate crossing methods will be confirmed for the ES following reconnaissance surveys to confirm the receptor value of the watercourse and likely impact which may include clear span bridges or HDD.
- 6.7.2.11 Where the Proposed Development includes drain-down, culverting or open-trenching to watercourses of value to fish, key fish migration timings will be avoided (such as migration season of European eel and spined loach which runs from April-June). Where watercourses and ditches are culverted, culverts will be designed to allow continued connectivity and fish passage along the watercourse, with a natural bed and no drop inlet or outlet. During the installation of culverts or over-pumping for open trenching through watercourses, fish rescue and translocation will be implemented.
- 6.7.2.12 Any access tracks, cable routing and fencing will be located to pass through existing gates and gaps in hedgerows where practicable.
- 6.7.2.13 Where temporary habitat loss will occur, such as the removal of sections of hedgerow to accommodate Cable Corridors, these features will be reinstated following construction as far as practicable.

Lighting

Construction

- 6.7.2.14 Temporary site lighting, in the form of mobile lighting towers will be required in areas where natural lighting is unable to reach (sheltered/confined areas) and during core working hours within winter months / hours of darkness. Artificial lighting would be provided to maintain sufficient security and health and safety for the construction areas, whilst adopting mitigation principles to avoid excessive glare and minimise spill of light to nearby receptors (including ecology and residential properties).
- 6.7.2.15 All construction lighting will be deployed in accordance with the following recommendations to prevent or reduce the impact on human and ecological receptors:
- Lighting will conform to best practice guidelines with respect to minimising light spill into adjacent habitats and prevent disturbance to bats and other species during construction
 - The use of lighting will be minimised to that required for safe site operations. Infrared, movement sensor security lighting would be used at night. Lighting would be available for emergencies;

- Lighting will utilise directional fittings to minimise outward light spill and glare (e.g. via the use of light hoods/cowls which direct light below the horizontal plane, preferably at an angle greater than 20° from horizontal); and
- Lighting will be directed towards the middle of the construction area rather than towards the boundaries.

Operation

6.7.2.16 The Proposed Development would generally not be lit. Lighting will be the minimum required for safety and security and not illuminating key habitat features (river corridors, hedgerows, Priority Habitats, mature trees). Where lighting is necessary, it will adhere to best practice guidelines and will be deployed in accordance with the following recommendations:

- Consideration of hood design, lamp height, and angle, to reduce light spill particularly avoiding illuminating retained foraging and commuting habitat on the site such as mature trees, waterbodies, tree lines, and hedgerows.
- Use of LED with less blue light e.g. 'warm white' (~3000K) or red light where appropriate.
- No metal halide lamps should be used anywhere in the Proposed Development.
- Minimising hours of lighting to those absolutely necessary for security and safety purposes, where possible lighting should avoid key periods of bat activity (i.e. sunset and sunrise).

Habitat management

6.7.2.17 Where possible, all mature trees, woodland blocks and hedgerow boundaries within Panel Areas will be retained and enhanced, such as woodland blocks and hedges with additional planting to provide instant screening.

6.7.2.18 Vegetation such as grassland will be managed prior construction to ensure it does not become more suitable for wildlife. Vegetation that does require cutting will be cut in a phased approach, firstly cutting to 30cm, then, following a period of no less than 24 hours, to 15cm and then to ground level, after another 24 hours. Any habitat features which may conceal amphibians (log piles, rubble mound bunds, any other debris etc.) will not be dismantled during their inactive season (November to February inclusive).

6.7.2.19 The existing and proposed hedgerows around the perimeter of the Panel Areas will be allowed to grow taller to at least 3m in height to provide a greater level of security. Hedgerows within the Panel Areas will be improved by planting up any gaps. The species selection will be developed in consideration of local landscape context and local provenance.

6.7.2.20 New hedgerows will also be established to supplement the existing, retained hedgerows. Hedgerows will be planted with native, locally occurring species as outlined within the Breckland Local Plan. New and reinforced hedgerows will provide a valuable habitat, forming important wildlife corridors.

- 6.7.2.21 Lengths of new, species rich, hedgerow will be planted to enhance the Panel Areas and compensate for any lost. Each hedgerow will have at least five native and locally occurring species.
- 6.7.2.22 The existing woodland within the Panel Areas will be retained and there is opportunity to enhance the woodland by creating more diversity, planting native tree species and altering management to increase the variety of age classes. Increasing the amount of deadwood will also improve the habitat available to a range of fauna.
- 6.7.2.23 Woodland planting comprising typically of native species (with some climate-change-adapting species), planted as multipurpose features for visual screening, will aid landscape integration and support nature conservation and biodiversity.
- 6.7.2.24 Hedgerows and trees will be allowed to grow tall and wide to provide maximum benefits for biodiversity and this natural regeneration will encourage a mosaic of successional habitats, forming broad habitat corridors throughout the Proposed Development.
- 6.7.2.25 The land under the solar PV modules and within buffer areas will be sown with a mix of locally found species which given the improved nature of the soil is expected to achieve a medium diversity grassland. To support BNG appropriate to the landscape, strategically significant habitats (e.g. valuable habitats which are limited or have been lost from the local area) would be restored or created where practicable. Such habitats would be identified by referring to available guidance such as Natural England's National Character Area profiles or Local Nature Recovery Strategy. The grassland will include a range of grasses and herbs which will benefit a range of pollinator species such as bees, butterflies and hoverflies. This grassland will be managed appropriately as set out within a habitat management plan to ensure the grassland achieves the highest diversity, supports a range of species and maintains a BNG uplift.
- 6.7.2.26 In addition, a suite of management plans will be in place for the Proposed Development, those relevant to biodiversity including:
- oCEMP
 - oLEMP
 - Outline Operational Environmental Management Plan (oOEMP)
 - oDEMP
- 6.7.2.27 These management plans incorporate embedded and good practice measures, as well as any further mitigation identified during the EIA.
- 6.7.2.28 Draft outline versions of these management plans are provided with this PEIR for review during statutory consultation. These will be updated and submitted with the DCO application to secure the commitments contained within. Appropriate Requirements will be included in the DCO application to ensure these management plans will be developed to full versions and submitted to the relevant planning authority for approval. This will take place prior to the commencement of relevant works and measures described in them are implemented.

- 6.7.2.29 The Proposed Development will comply with industry good practice and environmental protection legislation. Measures to prevent pollution incidents, minimise effects on ecology from noise and vibration, prevent and minimise dust creation and air pollution will be adopted. Precautionary working method statements would be produced controlled and implemented. Water management measures to reduce the likelihood and severity of potential pollution incidents and flooding will be adopted.

Table 6.14 *Summary of the Embedded Environmental Measures and how these Influence the Ecology Assessment*

Ecological Feature	Changes and Effects	Embedded Measures and Influence on Assessment
Statutory designated sites	Multiple statutory designated sites located within 10km. Uncontrolled works have the potential to impact these.	The design of the Proposed Development avoids all Statutory designated sites of biodiversity conservation importance. The oCEMP will include requirements to minimise any possible impacts during construction such as safe storage of chemicals and prevention of sediment run off.
Non-statutory sites	Multiple non-statutory designated sites located within 2km. Uncontrolled works have the potential to impact these sites.	The oCEMP will include requirements to minimise any possible impacts during construction such as safe storage of chemicals and prevention of sediment run off.
Woodland and hedgerows, roosting bats	Woodlands and hedgerows lie within the draft Order Limits. Removal of trees in woodland or hedgerows could result in the loss of bat roosts. Uncontrolled works or vehicular movements could damage roots and adversely impact trees.	All woodlands will be retained. Hedgerows (except for those where access or cable installation is required) will be retained. As no mature trees are anticipated to be removed no bat roosts in trees are expected to be affected. Buffers will be set up around woodland and hedgerows to avoid damage and compaction of roots. Any hedgerow removed will require compensation and will be included in the BNG calculations. Woodland to be improved by creating more diversity, planting native tree species and altering management to increase the variety of age classes as described in oLEMP. Increasing the amount of deadwood will also improve the habitat available to a range of fauna.
Grassland	In the absence of mitigation these habitats could be impacted by the works.	Where the Proposed Development includes soil removal, any soil will be added back in order. This will

Ecological Feature	Changes and Effects	Embedded Measures and Influence on Assessment
		include replacing the subsoil first and then replacing any turf. Suitable buffer areas will be enhanced to ensure a biodiversity habitat unit uplift. The oLEMP includes details of plating grassland of locally occurring species under the Panel Areas.
Linear watercourses	Uncontrolled works could result in sediment or pollution which may cause increases in the level of silt present and/or changes to the water chemistry.	A minimum 9m buffer from built development was applied along or around every watercourse and was taken into consideration into the Proposed Development design, as far as possible. The oCEMP will include further requirements to minimise any possible impacts during construction such as safe storage of chemicals and prevention of sediment run off. Buffer areas will be enhanced, sown with locally occurring species.
Waterbodies	Uncontrolled works could result in sediment or pollution which may cause increases in the level of silt present and/or changes to the water chemistry.	A minimum of 20m buffer will be applied around waterbodies (ponds). The oCEMP will include further requirements to minimise any possible impacts during construction such as safe storage of chemicals and prevention of sediment run off. Buffer areas will be enhanced, sown with locally occurring species.
Badgers	During construction badger setts could be damaged or lost, individual badgers could be disturbed, injured or suffer mortality.	A 30m buffer will be set up around known badger setts, noting that badgers are mobile and may create new setts.
Otters and water voles	During the construction phase, construction works may result in otters and/or water voles being disturbed, injured or suffering mortality, or their dwellings being damaged or lost.	Buffers will be set up around all ditches (except where crossings are required). These will avoid impacts on otters and water voles. The oCEMP will include further requirements to minimise any possible impacts during construction such as safe storage of chemicals and prevention of sediment run off.
Fish (including eels) and white clawed crayfish	During the construction phase, construction works, eels and fish could be disturbed, injured or suffer mortality.	Buffers will be set up around all ditches (except where crossings are required). The oCEMP will include further requirements to minimise any possible impacts

Ecological Feature	Changes and Effects	Embedded Measures and Influence on Assessment
		during construction such as safe storage of chemicals and prevention of sediment run off. Where there are direct impacts to watercourses of value to eels and fish, timing of works (outside of the key migration season) and culvert design will be implemented.
Great Crested Newt	During the construction phase, construction works, GCN may be disturbed, injured or suffer mortality.	All positive GCN waterbodies are expected to be retained. New terrestrial habitats will be created in the Panel Area which are more suitable for GCN than the existing arable land, along with enhancements to existing waterbodies. The oCEMP will include further requirements to minimise any possible impacts during construction such as safe storage of chemicals and prevention of sediment run off.
Bats (foraging)	During the construction phase, construction works, bats may be disturbed, injured or suffer mortality.	Majority of hedgerows will be retained. Standard environmental protection measures, including in respect of lighting, will be implemented and adopted during construction, as detailed in the oCEMP.

6.8 Assessment of effects

6.8.1 Construction

Statutory Designated Sites

- 6.8.1.1 Due to the close proximity of Breckland SPA and Breckland Forest SSSI, potential impacts from the Proposed Development include visual and noise disturbance and displacement of nesting and foraging stone curlews which are a qualifying feature. There is also the potential for indirect loss of functionally linked land and loss of foraging resource, but no impact is expected to the SPA habitats directly. Appropriate buffers are in place around the SPA but given the possible displacement of qualifying species and loss of functionally linked land, construction activities are expected to have a Low Adverse impact at National level, and the resultant effect is **Significant**.
- 6.8.1.2 River Wensum SPA, River Wensum SSSI, Norfolk Valley Fens SAC, Potter & Scarning Fens SSSI, The Broads SAC and Broadland SAC are hydrologically

connected to the Proposed Development via a series of smaller river, streams and ditches. Based on the information to date including the design principles and good practice measures included within the oCEMP, it is assumed there could be up to a temporary Very Low Adverse impact at up to County level on the above designated sites from waterborne contaminants, the resultant effect on their conservation status is **Not Significant**.

- 6.8.1.3 Construction traffic for the Proposed Development could use the A47, therefore, due to the proximity of the Potter & Scarning Fens SSSI, a component of Norfolk Valley Fens SAC, to the A47 (within 200m) the potential for construction traffic to impact this site has been considered.
- 6.8.1.4 The construction of the Proposed Development is expected to take 2.5 years therefore significant effects from construction traffic are not considered likely due to the short lived potential low contribution to air quality impacts. Furthermore, the expected daily HGV numbers required for construction range from 54 to 106, with the highest number only expected to last for a period of around 6 months. This equates to 108 to 212 trips per day, however, assuming a 5.5 day working week, gives a maximum AADT of approximately 155 during peak activity across the second year of construction. This is also a gross overestimate of potential impact to assess a worst case is below the threshold of 200 HDV AADT, as not all construction traffic will use this part of the A47 and only two Panel Areas are likely to be constructed simultaneously at any given time. Therefore, following accepted guidance concludes that significant effects are not likely, and no further assessment is required. This confirmation that vehicle movements would be below the screening threshold provides the evidence requested in the Scoping Opinion to confirm that potential effects of air quality on designated sites can be scoped out of the ES.
- 6.8.1.5 Impacts via air contamination are expected to have a Negligible Adverse impact and as such the resultant effect on the conservation status is **Not Significant**.

Non-Statutory Designated Sites

- 6.8.1.6 There are a number of CWS within 2 km and are connected to the draft Order Limits via habitat. The Disused Railway CWS bisects the Southern Panel Area and a number of ancient woodland CWS are immediately adjacent to the draft Order Limits. The design ensures there is an appropriate buffer to avoid direct impacts. Given the close proximity of these CWS, there is the potential for the construction phase to cause an increase in dust and air pollutants which is expected to cause a temporary Very Low Adverse impact at County level and the resultant effect is **Not Significant**.

Habitats

- 6.8.1.7 The majority of the habitat types of value are along field margins (including hedgerows and arable field margins) and it is expected that most of these habitats will be retained. Small sections of grassland habitat will be removed for the Proposed Development. Given the extent and quality of the grassland to be removed (i.e. it comprises of relatively common species), it is likely that it will be

quickly recolonised. Due to the relatively small extent of habitat lost permanently and relatively low value of the habitats expected to be removed, there will be a Very Low Adverse impact at Local level and the resultant effect is **Not Significant**.

- 6.8.1.8 At the time of writing the PEA survey of the Cable Corridor is underway and whilst habitats have been assessed during the desk study, the full extent and quality of the habitats is not yet known. The desk study suggests that most of the habitat within the Cable Corridor is arable. Field based surveys will confirm the desk study assumptions, condition the habitat and assess the potential of the land to support protected species.

Bats

- 6.8.1.9 Bats are likely to be impacted by temporary foraging habitat loss and indirect impacts during construction (such as disturbance via lighting). Appropriate buffers have been included in the design of the Proposed Development to avoid loss of hedgerows and woodland, including any trees that may contain bat roosts.
- 6.8.1.10 There is likely to be unavoidable loss of sections of hedgerows to facilitate the Cable Corridors. Large gaps in the hedgerow may prevent bats crossing from roosts to foraging areas. Likewise, lighting during the construction phase can prevent light-averse species from following commuting routes or foraging in an area (e.g. if a watercourse is lit, bats will avoid flying along this feature and feeding above it). In the absence of additional mitigation there will be up to a temporary Medium Adverse impact on bats at County level. Owing to the presence of a rare bat species (barbastelle) in the draft Order Limits, the resultant effect on conservation status is **Significant**.

Birds

- 6.8.1.11 During the construction phase of the Proposed Development there will be an increase in disturbance from construction workers (e.g. increase noise levels). This is likely to result in birds dispersing from the areas of the draft Order Limits where works are taking place.
- 6.8.1.12 The Panel Areas would be constructed in phases, with up to two Panel Areas anticipated to be under construction at any one time. Birds will, therefore, be able to use undeveloped Panel Areas whilst construction is occurring and relocate back in once it is finished.
- 6.8.1.13 Likewise, construction of the cables within and between each Panel Area would take place in parallel with construction of the Panel Areas themselves. Whilst construction is occurring, birds can use other sections and relocate back once the work is complete.
- 6.8.1.14 Notwithstanding this, as a proportion of the land will be unavailable due to disturbance at any one time, there will be an increase in competition for food resources on the remaining land during the seasons birds are using the draft Order Limits. Therefore, it is expected that disturbance during construction will have a

temporary Low Adverse impact at Local level on wintering and breeding birds, and the resultant effect is **Significant**.

- 6.8.1.15 The construction of the Proposed Development will result in permanent loss of ground nesting bird habitat and may modify habitats supporting Schedule 1 species such as stone curlew as well as priority species and red listed birds of conservation concern including skylark. This may potentially lead to the displacement of these species from key habitats and the loss of effective nesting opportunities. The construction phase will be short-term and the area effectively available for nesting birds' post-construction. However, some species such as stone curlew and skylark prefer to have a clear line of sight around the nest to view the approach of predators. Once the solar PV modules are installed the birds' line of site will be reduced and they will be less likely to use the Panel Areas.
- 6.8.1.16 There will be a loss of suitable stone curlew nesting areas and foraging sites as a result of the Proposed Development (loss of open arable landscape) and given that increase of personnel may cause displacement and disturbance it is anticipated there will be a permanent Low Adverse impact at County Level because of the loss of nesting habitat with the resultant effect on their conservation status being **Significant**.
- 6.8.1.17 As an indicator species, the population of skylark is relatively low (circa 0.14 territories per ha in the breeding bird survey area). Therefore, for ground nesting birds, there is anticipated to be a long term Low Adverse impact at Local level because of the loss of nesting habitat with the resultant effect on their conservation status being **Significant**.
- 6.8.1.18 For all other bird species that nest in the draft Order Limits, due to the availability of offsite nesting options, there is expected to be a temporary Very Low adverse impact at Local level and the resultant effect on their conservation status is **Not Significant**.
- 6.8.1.19 The solar PV module layout will allow substantial areas of grassland to be retained or created within the draft Order Limits and hence barn owl foraging resources will not be adversely impacted. Additional foraging habitat will likely be created around the margins of the Panel Areas which will result in a Minor Beneficial impact at Local level and the resultant effect on their conservation status is **Not Significant**.

Great crested newts

- 6.8.1.20 Land take of habitats that support GCN terrestrial refuges is likely to be relatively small. GCN will use scrub, hedgerows, grassland, tall ruderal vegetation as well as standing water. Sections of these habitats will be lost during the construction. These are mostly thin strips of land at field margins of which much will be retained. However, given the close proximity of a number of positive GCN waterbodies, there is the possibility they occupy habitat such as short sections of hedgerow, scrub and grassland which is due to be cleared or changed as part of the Proposed Development. Not all the waterbodies in and around the Panel Areas have been surveyed for the Proposed Development, and therefore the current

distribution of the populations of GCN is not known. The best practice measures within the oCEMP and design of the Proposed development reduces potential impact but there remains the possibility that the construction of the Proposed Development may result in direct mortality or injury of individuals as well as GCN losing habitats for the period it takes for the habitats to recolonise. As such there is expected to be a temporary Low Adverse impact at County level and the resultant effect on their conservation status is **Significant**.

Badgers

- 6.8.1.21 Construction activities in the proximity of setts may result in injury to any individuals present at the time. The final design of the Proposed Development will include appropriate stand-off buffers from known badger setts. However, as badgers are a mobile species and there may be a temporary reduction in suitable foraging land in the immediate vicinity, as well as disturbance from increase personnel and noise there is expected to be a temporary Very Low impact at Local level on badgers during construction. As their protection is to avoid persecution rather than because of their conservation status, the resultant effect is **Not Significant**.

Otters

- 6.8.1.22 Otters are known to be active throughout the Wendling Beck and may be impacted by indirect impacts during construction, leading to disturbance and potential displacement. Appropriate stand-off buffers have been included in the design of the Proposed Development around watercourses within the Panel Areas, although there may need to be crossings over linear water features for the Cable Corridor and access tracks. Temporary Low Adverse impacts at Local level are expected and the resultant effect on the conservation status is **Significant**.
- 6.8.1.23 Impacts on otters within the Cable Corridor is not yet known. A full assessment of the likely significant effects will be included within the ES.

Water voles

- 6.8.1.24 Water voles have been recorded within the Wendling Beck and River Wissey and may be affected by indirect impacts during construction, leading to disturbance and potential displacement. Appropriate stand-off buffers have been included in the design of the Proposed Development around watercourses within the Panel Areas. Temporary Low Adverse impacts at Local level are expected and the resultant effect on the conservation status is **Significant**.
- 6.8.1.25 Given that new crossing of watercourses will be avoided wherever reasonably possible, only impact from disturbance is expected. A full assessment of the likely significant effects will be included within the ES.

Fish

- 6.8.1.26 During the construction phase, there is risk that watercourses could be impacted. However, the majority of watercourses will be subject to an appropriate buffer.

Watercourses providing habitat to fish including eels may need to be temporarily crossed to provide construction access for the Panel Areas.

- 6.8.1.27 The Cable Corridor and access tracks may cross over linear water features and as such installation impacts such as disturbance of fish movement are possible, a temporary Low Adverse impact at Local level on fish including eels is expected as a result of the Proposed Development, with the resulting effects on the conservation status as **Not Significant**.

Invertebrates

- 6.8.1.28 The proposed layout of the Panel Areas enables the retention of most habitats suitable for invertebrates such as field margins, waterbodies, woodland and hedgerows. Small sections of these habitats may be lost during the construction phase to allow for the access within the draft Order Limits and the Cable Corridor installation. Land take is likely to be relatively small. Buffers of habitat along waterbodies in Panel Areas will be retained and only short sections of ditch will likely be crossed for the installation of the cabling and access tracks. Therefore, it is expected that the habitat loss during the construction of the Proposed Development will have a temporary Low Adverse impact at Local level on invertebrates, and the resultant effect on their conservation status is **Not Significant**.

Reptiles

- 6.8.1.29 Reptiles use scrub, grassland and tall ruderal vegetation. These habitats will be reasonably avoided where possible, but small sections of these habitats will likely be lost during the construction phase.
- 6.8.1.30 Land take of relevant habitats is likely to be relatively small. As part of embedded mitigation buffers of habitat along waterbodies and woodlands in the Panel Areas will be retained. It is expected that the habitat loss during the construction of the Proposed Development will have a temporary Very Low adverse impact at Local level on reptiles, the resultant effect on their conservation status is **Not Significant**.

Other Priority Species

- 6.8.1.31 Indirect impacts to other receptors including hedgehog and brown hare are considered in regard to habitat loss and indirect impacts. During the construction phase of the Proposed Development, there will be increased levels of disturbance (i.e. noise) as well as an increased human presence in areas used by small mammals. Whilst these species can adapt to human disturbance, the Proposed Development will cause disturbance that they have not habituated to in this location (e.g. vehicles, personnel in hi-visibility clothing). Overall, there is expected to be a temporary Low Adverse impact at Local level on small mammals because of land take and disturbance, with the resulting effects on the conservation status as **Not Significant**.

- 6.8.1.32 During the construction phase of the Proposed Development some areas will include permanent security fences. In areas assigned for bird mitigation, fences will not include mammal gaps and restrict access and movement of mammals, to ensure that those areas of the Panel Area are suitable for ground nesting birds. Given the land take and reduced connectivity, a permanent Low Adverse impact at Local level on small mammals is expected, with the resulting effects on the conservation status as **Not Significant**.

6.8.2 Operation

- 6.8.2.1 In general, for the ecological receptors in the draft Order Limits, most of the impacts will occur during the construction phase and no impacts will result in significant effects during the operational phase. The majority of the impacts to ecological receptors will be related to land take, potential contamination and disturbance, all of which will be due to construction. Following construction this activity will cease and the impacts will not continue. Ground nesting birds will be impacted during construction and the impact (loss of sightlines) will continue during operation; however, the impact expected to ground nesting birds will not alter so has not been included as an additional operational impact.
- 6.8.2.2 Whilst it is anticipated that occasional maintenance visits will be required during the operational phase, these will be short-term and on such a small scale that any impacts will be unlikely to result a significant effect.

Designated sites

- 6.8.2.3 During the operational phase there is potential for continued disturbance on breeding birds (including species which are a qualifying feature of Breckland SPA and Breckland Forest SSSI). The potential impact includes visual and noise disturbance although during operation this is expected to be minimal with only routine maintenance checks required. The indirect loss of functionally linked land and loss of foraging resource will continue from the construction phase to the operational phase. No direct impacts to the habitats within Breckland SPA are expected. Given the potential displacement of a qualifying species and loss of functionally linked land, operational activities are expected to have Low Adverse impact at National level, and the resultant effect is **Significant** (given this disturbance will be infrequent and likely minimal).

Habitats

- 6.8.2.4 As solar farms are passive developments the impacts from the Proposed Development during operation on retained habitats would be minimal, with on-site activities limited and restricted to routine maintenance activities, for example replacement of any components that fail, monitoring activities and vegetation management. As such, negligible impacts on the retained woodlands, hedgerows and watercourses within the draft Order Limits are expected from the operation of the Proposed Development.
- 6.8.2.5 The Proposed Development will result in the Panel Areas being taken out of arable use as the area will not be accessible to farm machinery. This will allow for the

creation of more biodiverse habitats during the operational phase. The aim will be to achieve BNG on site with habitats appropriate for the local area and site use. Habitats in keeping with the natural landscape character will be targeted and existing hedgerows and woodland will be enhanced where possible. The majority of the draft Order Limits, which is currently arable land, will be enhanced to be grassland of increased value to wildlife. The enhanced and newly created habitats will improve foraging and refuge opportunities for protected and notable species. A BNG Assessment will be appended to the ES, provided with the DCO application. There is expected to be a long term (40 years) Moderate Beneficial impact at Local level with the resulting effect on the conservation status of habitats and the species they support being **Significant**.

Fish (including eels)

- 6.8.2.6 The Proposed Development will likely involve laying electrical cables under the beds of the relevant watercourses. There is limited, mainly marine based research which demonstrates the electromagnetic fields (EMF) emitted by the cable can affect some fish species. Given the small size of most of the watercourses it is considered that there will be a permanent (throughout the 40-year life of the Proposed Development) Low Adverse impact at Local level on fish including eels is expected, with the resulting effects on the conservation status as **Significant**.

6.8.3 Decommissioning

Statutory Designated Sites

- 6.8.3.1 Given the close proximity of Breckland SPA and Breckland Forest SSSI component, potential impact includes visual and noise disturbance and displacement of nesting and foraging stone curlews which are a qualifying feature. There is also the potential for indirect loss of functionally linked land and loss of foraging resource. Given displacement of qualifying species and loss of land, decommissioning activities are expected to have Low Adverse impact at County level, and the resultant effect is **Significant**.
- 6.8.3.2 River Wensum SPA, River Wensum SSSI, Norfolk Valley Fens SAC, Potter and Scarning Fens SSSI, The Broads SAC and Broadland SAC are hydrologically connected to the draft Order Limits via a series of smaller river, streams and ditches. Based on the information to date, including the design principles and good practice measures included within the oDEMP, is assumed there could be up to a temporary Very Low adverse impact on the above designated sites from waterborne contaminants, the resultant effect on their conservation status is **Not Significant**.
- 6.8.3.3 Given the proximity of the A47 to Potter & Scarning Fens SSSI, a component of Norfolk Valley Fens SAC, there is potential for impact as a result of increased traffic and therefore changes in air quality as a result of the Proposed Development. During the decommissioning phase, the additional traffic associated with this phase of the Proposed Development is expected to be less than that described in section 6.8.1 for construction and for a shorter period of time; therefore, below

screening thresholds and no further assessment is required. Impacts via air contamination are expected to be Negligible and **Not Significant**.

Non-Statutory Designated Sites

- 6.8.3.4 There are a number of CWS within the ZoI that are within close proximity or are connected to the Panel Areas via habitat. The Disused Railway CWS bisects the Southern Panel Area and a number of ancient woodland CWS are immediately adjacent to the draft Order Limits. The Proposed Development design ensures there is an appropriate buffer to avoid direct impacts to CWS along with measures outlined in the oDEMP. Given the close proximity of CWS, there is the potential for the decommissioning phase to cause an increase in dust and air pollutants which is expected to cause a temporary Very Low adverse impact at County level and the resultant effect is **Not Significant**.

Habitats

- 6.8.3.5 As part of the decommissioning phase, the Panel Area and Cable Corridor will be restored to arable/ previous use. This is assumed to result in the loss of most or all of the habitats created to deliver BNG. As such there is expected to be a loss of priority habitats.
- 6.8.3.6 Where possible, created habitats will be retained during decommissioning, subject to agreement with landowners (e.g. as field margins and enhanced hedgerows) and it is anticipated that there will be an enhancement greater than if the Proposed Development did not occur. There is expected to be a permanent Low Adverse impact on the habitats and species they support at the Local level. However, this is assuming development and BNG takes place; compared to a 'no development' scenario the post-decommissioning habitats will be the same or better condition. Therefore, there will be a resulting **Not Significant** effect on the conservation status of all habitats.

Bats

- 6.8.3.7 As part of embedded mitigation appropriate buffers have been built into the design proposals for the Proposed Development area to avoid loss of hedgerows and woodland, including any trees that may contain bat roosts.
- 6.8.3.8 There may be unavoidable loss of some hedgerows to facilitate access for the decommissioning, although primarily the existing operational access tracks would be used to facilitate decommissioning. Large gaps in the hedgerow may prevent bats crossing from roosts to foraging areas. Likewise, lighting during the decommissioning phase can prevent light-averse species from following commuting routes or foraging in an area (e.g. if a watercourse is lit, bats will avoid flying along this feature and feeding above it). There is assumed to be a temporary Medium Adverse impact on bats at County level. Owing to the presence of a rare bat species in the Panel Areas, the resultant effect on conservation status is **Significant**.

Birds

- 6.8.3.9 During the decommissioning phase of the Proposed Development there will be an increase in people and associated disturbance (e.g. increase noise levels). This is likely to result in birds dispersing from the Panel Areas where works are taking place.
- 6.8.3.10 The Panel Areas will be decommissioned in phases. Birds will, therefore, be able to use the other Panel Areas whilst the decommissioning is occurring and relocate back in once it is finished.
- 6.8.3.11 Notwithstanding this, as a proportion of the land will be unavailable due to disturbance at any one time, there will be an increase in competition for food resources on the remaining land during the seasons birds are using the draft Order Limits. Therefore, it is expected that disturbance during decommissioning will have a temporary Low Adverse impact at Local level on wintering and breeding birds, and the resultant effect on their conservation status is **Significant**.
- 6.8.3.12 The land occupied by the solar PV modules will be released post development, which if the habitats continue to be managed sympathetically (for example arable land with field margins) will provide greater opportunities for ground nesting birds such as skylark. In addition, there will continue to be field margins/buffer areas which provide suitable nesting and foraging provision for ground nesting birds. This will have a Low Beneficial impact at Local level of breeding birds and the resultant effect on their conservation status is **Significant**.

Great crested newts

- 6.8.3.13 GCN are dependent on the waterbodies and adjacent habitats during the breeding season. Given the close proximity of a number of positive GCN waterbodies, there is the possibility they occupy habitat such as grassland which is due to be cleared as part of the decommissioning.
- 6.8.3.14 Not all the waterbodies in and around the Panel Areas have been surveyed for the Proposed Development, and therefore the distribution of the current population of GCN is not known, it is assumed that there will be a temporary Low Adverse impact on GCN at County level as a result of waterborne contaminants and habitat loss, and the resultant effect on their conservation status is **Significant**.

Badgers

- 6.8.3.15 Decommissioning activities in the proximity of setts may result in injury to any individuals present at the time. Appropriate stand-off buffers around known badger setts will be included in the design of the Proposed Development. However, badgers are a mobile species and may construct new setts prior to the decommissioning phase commencing. Due to the increased personnel and noise, there is the potential for increased disturbance. As such, there is expected to be a temporary Very Low impact at Local level on badgers during decommissioning. As their protection is to avoid persecution rather than because of their conservation status, the resultant effect is **Not Significant**.

Riparian mammals

- 6.8.3.16 Appropriate stand-off buffers have been included in the design of the Proposed Development around ditches in the Panel Areas, although there may need to be crossings for access roads (primarily the existing operational access tracks would be used to facilitate decommissioning). During the decommissioning phase of the Proposed Development, there will be increased levels of disturbance (i.e. noise) as well as an increased human presence in areas used by water voles and otters. The Proposed Development will cause disturbance that they have not habituated to in this location (e.g. vehicles, personnel in hi-visibility clothing). In the absence of mitigation, it is likely that both water voles and otters will temporarily relocate away from the source of the disturbance. The disturbance during the decommissioning phase is likely to have a temporary Low Adverse impact at Local level on water voles and otters. Owing to the presence of similar habitats nearby, the resultant effects on the conservation status of water voles and otters is expected to be **Not Significant**.

Fish

- 6.8.3.17 During the decommissioning phase, there is risk that watercourses could be impacted. The majority of watercourses will be subject to an appropriate buffer. Watercourses providing habitat to fish and eels may need to be temporarily crossed to provide access to the traffic, although primarily the existing operational access tracks would be used to facilitate decommissioning. There is expected to be a temporary Low Adverse impact at Local level on fish including eels as a result of the Proposed Development, with the resulting effects on the conservation status as **Not Significant**.

Invertebrates

- 6.8.3.18 The proposed layout of the Panel Areas enables the retention of most habitats suitable for invertebrates such as field margins, waterbodies, woodland and hedgerows. Small sections of these habitats may be lost during the decommissioning phase to allow for the access to the Panel Areas, although primarily the existing operational access tracks would be used to facilitate decommissioning. Land take is likely to be relatively small. Buffers of habitat along waterbodies in Panel Areas will be retained. Therefore, it is expected that the habitat loss during the decommissioning of the Proposed Development will have a temporary Low Adverse impact at Local level on invertebrates, and the resultant effect on their conservation status is **Not Significant**.

Reptiles

- 6.8.3.19 Reptiles use scrub, grassland and tall ruderal vegetation. These habitats will be reasonably avoided where possible, but small sections of these habitats may be lost to facilitate access to the Panel Areas and Cable Corridor.
- 6.8.3.20 Land take of relevant habitats is likely to be relatively small. As part of embedded mitigation buffers of habitat along waterbodies and woodlands in the Panel Area will be retained. it is expected that the habitat loss during the decommissioning of the Proposed Development will have a temporary Very Low adverse impact at

Local level on reptiles, the resultant effect on their conservation status is **Not Significant**.

Other Priority Species

- 6.8.3.21 Indirect impacts to other receptors including hedgehog and brown hare are considered in regard to habitat loss and indirect impacts. During the decommissioning phase of the Proposed Development, there will be increased levels of disturbance (i.e. noise) as well as an increased human presence in areas used by small mammals. Whilst these species can adapt to human disturbance, the Proposed Development will cause disturbance that they have not habituated to in this location (e.g. vehicles, personnel in hi-visibility clothing). In the absence of mitigation, it is likely that small mammals will temporarily relocate away from the source of the disturbance. The disturbance during the decommissioning phase is likely to have a temporary low adverse impact on small mammals, especially hares which were found within proximity to the draft Order Limits.
- 6.8.3.22 Overall, there is expected to be a temporary Low Adverse impact at Local level on small mammals because of land take and disturbance, with the resulting effects on the conservation status as **Not Significant**.

6.9 Additional mitigation

- 6.9.1.1 Additional mitigation are actions that require additional site and project specific activity in order to achieve a reduction in effect, and/or anticipated outcome. Further mitigation for biodiversity will be defined, if required, through the EIA process. Once the value of the ecological features and the likely effects on them are fully understood, the following mitigation hierarchy will be adopted:
- Avoid impacts (e.g. move aspects of the Proposed Developments to avoid features entirely);
 - Minimise impacts (e.g. reducing the area of land take); and
 - Restore after impacts (e.g. restoring a habitat damaged during construction)
- 6.9.1.2 If none of the above can be carried out, compensation (e.g. creating additional habitat to that embedded in the design where it was not previously found) would be undertaken.
- 6.9.1.3 The mitigation described in this PEIR (which will be further defined in the ES) focuses on minimising, restoring and compensating for impacts that cannot be avoided. Where the design incorporates avoidance of ecological features, this will be identified. The proposed mitigation will be designed to be proportionate to the value of the feature and consequent impacts of the Proposed Development. Where there is uncertainty in the level of effect, a precautionary approach will be taken.
- 6.9.1.4 Additional mitigation identified for biodiversity is presented below.
- 6.9.1.5 Bespoke mitigation to ensure that sufficient habitat within the draft Order Limits remains during the operational phase and is managed appropriately to allow for

continued nesting and foraging habitat for ground nesting birds will be included in the design process and has been included in meetings to date with Natural England. This mitigation will provide functionally linked land and habitat for stone curlew, a qualifying feature of Breckland SPA. Mitigation will also be required to ensure suitable foraging habitat and food source remains for red-listed Birds of Conservation Concern. New scrub habitat will be created in selected areas to provide suitable habitat for declining farmland birds. These habitat will be developed in collaboration with the design engineers and landscape architect and will be an integral part of the design of the Proposed Development.

- 6.9.1.6 A detailed environmental masterplan highlighting how the long-term management of the land within and adjacent to the Proposed Development will deliver a substantial net gain in biodiversity, and this will be demonstrated through the appropriate use of the Defra Biodiversity Metric. An Outline Environmental Masterplan is provided as part of the consultation documents. A BNG Assessment will be provided with the DCO application.
- 6.9.1.7 Establishment of a sensitive lighting plan covering construction and operational lighting to ensure lighting of suitable bat commuting, foraging and roosting habitats, fish spawning grounds and otter/water vole habitat is minimised.
- 6.9.1.8 Where temporary habitat loss will occur, such as the removal of sections of hedgerow to accommodate Cable Corridors, these features will include a temporary bat crossing such as installation of heras fencing to ensure bats can still use the habitat feature for commuting.
- 6.9.1.9 Engagement and consultation with EA will be perused regarding the crossing of watercourses as part of the Cable Corridor, particularly to establish mitigation to minimise or avoid impacts to fish as a result of EMF emissions.
- 6.9.1.10 Provision of an ECoW to minimise impacts to GCN, reptiles and nesting birds during construction and decommissioning, via conducting searches of habitats in advance and establishing temporary buffer zones.
- 6.9.1.11 Pre-construction surveys, such as riparian mammal, badger and/or bat walkovers (if roost features are impacted), will be undertaken as required to support the baseline survey findings, ensure necessary mitigation is properly implemented and to comply with relevant wildlife legislation.
- 6.9.1.12 An invasive non-native plant species (INNS) method statement will be produced if INNS are identified as present during pre-construction surveys to inform the management of invasive plant species found within the draft Order Limits.
- 6.9.1.13 If throughout the EIA process, impacts to European protected species such as GCN, bats or water voles are possible, the licence will be secured with specific agreement on mitigation measures with Natural England. Any licences will include details on mitigation to prevent harm individuals along with the protection and enhancement of suitable breeding ponds/ roosting habitat/ watercourses. Further mitigation measures may include working under a method statement, exclusions

zones, provision of ECOW and potential trapping/ translocation of protected species.

6.9.1.14 Following the results of surveys, the Applicant is committed to continue to develop the design and embed multi-functional mitigation to further reduce effects and explore opportunities for enhancement measures, additional buffers may include:

- Minimum of 20m buffer from waterbodies, with an increased buffer from GCN positive ponds.
- 30m buffer from badger sett locations.

6.9.1.15 While not additional mitigation, a HRA will be undertaken and submitted with the ES as part of the DCO application. A HRA Screening is provided in Appendix 6.3. Any mitigation within this in relation to designated sites and their qualifying features will be included and agreed with Natural England.

6.10 Residual effects

6.10.1 Construction

6.10.1.1 The preliminary assessment concludes negligible adverse residual effects as assessed in Section 6.8 which are **Not Significant** for the following receptors:

- Non-statutory Designated Sites
- Priority habitats
- Fish; and
- Reptiles.

Receptors with Residual Adverse Effects

6.10.1.2 No Significant adverse residual impacts have been identified by the preliminary assessment. Where a Significant effect has been addressed to Not Significant, the receptors are outlined below.

Statutory Designated Sites

6.10.1.3 The majority of impacts related to the faunal receptors of Breckland SPA will be addressed through the additional mitigation, which includes creation of bird nesting habitat designed to create habitat for Stone curlew. Temporary low adverse indirect impacts are expected via increase of disturbance (vehicle movements, human presence, noise and light and vibration) to associated faunal receptors. Natural England will be consulted to discuss the mitigation requirement which will likely include creation of bespoke habitats, having an ECOW present to conduct searches of sensitive habitat and appropriate management of bird nesting habitat. There may also be further requirement to work under a method statement or install signage on any public rights of way to ensure dogs do not disturb associated faunal receptors once this provision is created. Further mitigation results in temporary Very Low adverse impact at County level which is considered **Not Significant**.

Bats

- 6.10.1.4 The majority of remaining impacts to bats are addressed through the implementation of a sensitive lighting plan and further additional mitigation measures such as temporary bat crossings. Residual impacts are restricted to temporary foraging and commuting habitat loss which will be apparent through the installation of the Proposed Development until the re-instated habitats have become established. This results in Low Adverse impact at Local level, the resultant effect on the conservation status is **Not Significant**

Breeding Birds

- 6.10.1.5 Additional mitigation measures including the creation of suitable bird nesting habitat will reduce adverse impacts to nesting birds, however a temporary low adverse impact would still occur due to the temporary reduction in available ground-nesting habitat and disturbance as a result of increased noise and vehicular movement. This results in a Low Adverse impact at County level, with the resultant effect on the conservation status considered **Not Significant**.

Great Crested Newts

- 6.10.1.6 Adverse impacts during the construction phase would be mitigated via the additional mitigation, likely through the licence requirement and details will be agreed with Natural England, likely to involve preventing GCN accessing the working areas during construction. Temporary unavoidable potential impacts would still occur due to temporary habitat loss and increased vehicular movement. This results in a temporary Low Adverse impact at County level with resultant effect on the conservation status considered **Not Significant**.

Operation

- 6.10.1.7 Following the application of additional mitigation, the preliminary assessment concludes Negligible Adverse (**Not Significant**) impacts for the following receptors:

- Non-statutory Designated Sites;
- Non-priority habitat;
- Invertebrates.

Receptors with Residual Adverse Effects

- 6.10.1.8 No significant adverse residual impacts have been identified by the preliminary assessment. Where a Significant effect has been addressed to Not Significant, the receptors are outlined below.

Statutory Designated Sites

- 6.10.1.9 Whilst appropriate buffers and the provision of additional stone curlew habitat mitigate the majority of impacts, minimal, unavoidable disturbance to associated faunal assemblages of the Breckland SPA may occur due to increase lighting, noise

and vehicular movement. This results in a Very Low Adverse residual impact at County level which is considered **Not Significant**.

Fish including eels

- 6.10.1.10 The impacts on fish including eels from EMF will be addressed and agreed prior to the DCO application through consultation with the EA. The residual impacts are expected to be Negligible, with the resultant effect on the conservation status considered **Not Significant**.

Bats

- 6.10.1.11 Mostly impacts to bats are mitigated through the implementation of a sensitive lighting plan. Residual impacts may occur due to increased vehicular movement. This results in a Very Low Adverse residual impact at Local level, with the resultant effect on the conservation status considered **Not Significant**.

Breeding Birds

- 6.10.1.12 The majority of impacts to breeding birds will be mitigated via the creation of bird nesting habitat. Breeding birds would experience residual occasional operational impacts including noise and vehicle movements during maintenance operations. This results in a Low Adverse impact at Local level, with the resultant effect on the conservation status considered **Not Significant**.

6.10.2 Decommissioning

- 6.10.2.1 Following the application of additional mitigation, the preliminary assessment concludes Negligible Adverse (**Not Significant**) effects for the following receptors:

- Non-statutory Designated Sites;
- Priority habitat;
- Fish; and
- Protected and notable plants.

Receptors with Residual Adverse Effects

- 6.10.2.2 No significant adverse residual effects have been identified by the preliminary assessment. Where a Significant effect has been addressed to Not Significant, the receptors are outlined below.

Statutory Designated Sites

- 6.10.2.3 Temporary impacts are expected via increase of disturbance (vehicle movements, human presence, noise and light and vibration) to associated faunal receptors of Breckland SPA. This results in a Low Adverse impact at County level, with the resultant effect on the conservation status considered **Not Significant**.

Bats

- 6.10.2.4 The majority of remaining impacts to bats are addressed through additional mitigation including appropriate lighting of the Proposed Development and installation of temporary bat crossings. Bats are likely to be impacted by foraging habitat loss which cannot be fully controlled by further mitigation measures. This results in a Low Adverse impact at Local level, with the resultant effect on the conservation status considered **Not Significant**.

Breeding Birds

- 6.10.2.5 Timing of works outside of the breeding bird season and/or provision of ECoW will reduce adverse impacts to nesting birds, however possible impacts would still occur due to the temporary reduction of available ground-nesting habitat and disturbance as a result of increase lighting, noise and vehicular movement during decommissioning. This results in a Low Adverse impact at Local level, with the resultant effect on the conservation status considered **Not Significant**.

Great Crested Newts

- 6.10.2.6 Adverse impacts during the decommissioning phase would be mitigated via the additional mitigation, likely through the licence requirement and details will be agreed with Natural England, likely to involve preventing GCN entering the working areas. Temporary unavoidable potential impacts would still occur due to the temporary habitat loss and increased vehicular movement. This results in temporary Low Adverse impact at County level with resultant effect on the conservation status considered **Not Significant**.

Great crested newts

- 6.10.2.7 Adverse impacts during the decommissioning phase would be partially mitigated with the additional measures, however an unavoidable adverse impacts would still occur due to temporary habitat loss and increased vehicular movement. This results in a Low Adverse impact at Local level, with the resultant effect on the conservation status considered **Not Significant**.

6.11 Monitoring

- 6.11.1.1 Monitoring of habitats and species will be undertaken in accordance with the species licences and method statements as set out within oLEMP.
- 6.11.1.2 To deliver BNG, the oLEMP has been produced. The oLEMP includes further details on the monitoring and maintenance of created habitats, including condition assessments
- 6.11.1.3 If necessary, adjustments will be made to the Habitat Management and Monitoring Plan (HMMP) which will be submitted and agreed with the Local Authorities as part of the BNG. This is outlined within the oLEMP.

6.12 Opportunities for enhancement

- 6.12.1.1 An Outline Environmental Masterplan has been produced and outlines enhancement provision. Opportunities for enhancements include:
- 6.12.1.2 The existing woodland within the Panel Areas will be retained and there is opportunity to enhance the woodland by creating more diversity, planting native tree species and altering management to increase the variety of age classes. Increasing the amount of deadwood will also improve the habitat available to a range of fauna.
- 6.12.1.3 Designing the habitats within and around the solar PV modules to enhance biodiversity as far as possible, ideally to create Priority habitats which are reflective of the baseline habitat conditions.
- 6.12.1.4 Enhancing connectivity of the habitats within the draft Order Limits by planting up gaps in hedgerows and management of habitat surrounding waterbodies to increase connectivity between waterbodies.
- 6.12.1.5 Improving waterbodies by ensuring management encourages use of waterbodies by GCN.
- 6.12.1.6 The use of habitat boxes and habitat piles to create new habitat within areas such as woodland.

6.13 Summary

- 6.13.1.1 Table 6-15 presents a summary of the biodiversity assessment, detailing further mitigation requirements and residual effects.

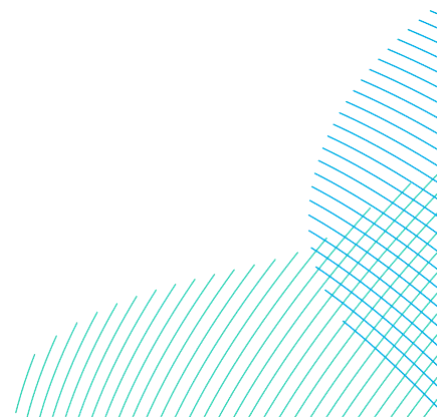


Table 6-15 Biodiversity - Preliminary assessment summary

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
Construction						
Statutory Designated Sites	A minimum of 50m buffer	Temporary disturbance as a result of construction activities. Land take of functionally linked habitat. Adverse impact from disturbance and loss of land to designated features	National	Significant	Avoidance of key habitats, stone curlew plots to be incorporated into the design. Other mitigation to be outlined in HRA	Temporary Low Adverse - Not Significant
Non-statutory Designated Sites	A minimum of 50m buffer from Panel Areas. Measures to avoid pollution of sediment transfer included in oCEMP.	Temporary (potentially permanent) adverse impact as a result of habitat loss and temporary disturbance	County	Not Significant	Sensitive lighting, noise and vibration scheme	Negligible - Not Significant
Habitats	Buffers included for habitat such as hedgerows, woodland and waterbodies. Measures to avoid pollution of sediment transfer included in oCEMP.	Adverse impact as a result of deterioration through shading from solar PV modules and direct land take.	Local	Not Significant	Avoidance of direct loss where feasible	Negligible – Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
Bats	Buffers included for suitable roosting and commuting habitat.	Adverse impact as a result of permanent loss of foraging habitat, disturbance to foraging, commuting and roosting bats and incidental harm	County	Significant	Erection of bat boxes. Establishment of a sensitive construction lighting scheme	Temporary Low Adverse - Not Significant
GCN	Buffers included to waterbodies with extended buffers where GCN are confirmed. Follow standard pollution avoidance during construction as outlined further within the oCEMP	Adverse impact as a result of temporary loss of habitat, disturbance and incidental harm	County	Significant	Avoid suitable habitats where possible. If not, GCN will be temporarily excluded from areas to be impacted.	Temporary Low Adverse - Not Significant
Breeding Birds	Some suitable habitats such as woodland and hedgerows have appropriate buffers. Construction measures such as timing of clearance to avoid nesting bird season or provision of	Adverse impact as a result of permanent loss of habitat for ground-nesting species, disturbance, displacement and incidental harm	County level for Stone curlew, at Local level for other breeding birds	Significant	Mitigation areas suitable for ground nesting birds to be included within design.	Low Adverse - Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
	Ecological Clerk of Works (ECoW) included within oCEMP					
Wintering Birds	Some suitable habitats such as woodland, waterbodies and hedgerows have appropriate buffers.	Adverse impact as a result of permanent loss of habitat, disturbance and incidental harm	Local	Not Significant	Avoidance of key habitats where feasible. Additional creation of foraging habitat.	Temporary Low Adverse - Not Significant
Badger	A minimum buffer of 30m from badger setts. Best practice measures such as ensuring all excavations are ramped or fenced included within oCEMP	Temporary adverse impact as a result of loss of foraging habitat, disturbance and incidental harm	Local	Not Significant	Pre construction badger checks.	Temporary Low Adverse - Not Significant
Otter	Appropriate buffer from riparian habitat. Best practice measures such as ensuring all excavations are ramped or fenced and a sensitive lighting scheme	Temporary adverse impact as a result of loss of foraging habitat, disturbance, incidental harm	Local	Not Significant	Avoidance of key habitats and foraging habitats. Pre construction otter checks. Trapping under development licence if required.	Temporary Low Adverse - Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
	included within oCEMP.					
Water vole	Appropriate buffer from riparian habitat. Best practice measures such as ensuring all excavations are ramped or fenced included within oCEMP.	Temporary adverse impact as a result of loss of foraging habitat, disturbance, incidental harm	Local	Not Significant	Avoidance of key habitats and foraging habitats Pre construction water vole checks. Temporary displacement under development licence if required.	Temporary Low Adverse -Not Significant
Reptiles	Best practice measures such as ensuring all excavations are ramped or fenced included within oCEMP.	Temporary adverse impact as a result of loss of habitat, disturbance, incidental harm	Local	Not Significant	Avoiding better quality reptile habitat.	Negligible -Not Significant
Fish	Appropriate buffer from watercourses. Pollution and sediment run off prevention measures included within the oCEMP.	Temporary adverse impact as a result of loss of habitat, disturbance from EMF and displacement of spawning grounds	Local	Not significant	Additional creation of bankside vegetation. Consultation with EA regarding minimising EMF impacts.	Negligible - Not Significant
Invertebrates	Some suitable habitats such as woodland and hedgerows have	Temporary adverse impact as a result of loss of habitat,	Local	Not Significant	Creation of new habitats	Temporary Low Adverse - Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
	appropriate buffers. Best practice measures included within the oCEMP.	disturbance, incidental harm				
Other protected species/ small mammals	Some suitable habitats such as woodland and hedgerows have appropriate buffers. Best practice measures such as ensuring all excavations are ramped or fenced included within oCEMP.	Temporary adverse impact as a result of loss of habitat, disturbance, incidental harm	Local	Not Significant	Avoidance of key habitats and foraging habitats	Temporary Low Adverse - Not Significant
Operation						
Statutory Designated Sites	A minimum of 50m buffer	Adverse impact as a result of disturbance and displacement of designated features	National	Significant	Management of lighting and vehicle movements. Measures to reduce sediment control	Low Adverse Impact - Not Significant
Non-statutory Designated Sites	A minimum of 50m buffer from Panel Areas	Negligible impacts under embedded mitigation	County	Not Significant	Management of lighting and vehicle movements. Measures to reduce sediment control	Negligible – Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
Habitats	Buffers included for habitat such as hedgerows, woodland and waterbodies	Adverse impact as a result of deterioration through shading from solar PV modules	Local	Not Significant	Grassland between solar PV modules to be planted to increase quality of habitats.	Beneficial – Not Significant
Bats	Buffers included for suitable roosting and commuting habitat	Adverse impact as a result of disturbance through increased lighting and operational activities	County	Significant	Establishment of a sensitive lighting scheme during operation	Low Adverse - Not Significant
GCN	Buffers included for waterbodies. Management of lighting and vehicle movements. Measures to reduce sediment control.	None under embedded mitigation	County	Not Significant	Habitat management plan to include measures to increase terrestrial habitat quality, enhancement of suitably located waterbodies	Negligible (or potential beneficial)- Not Significant
Breeding Birds	Some suitable habitats such as woodland and hedgerows have appropriate buffers. Management of lighting and vehicle movements.	Adverse impact as a result of disturbance due to lighting and movement and displacement of ground nesting species	County	Significant	Ground nesting bird mitigation fields.	Low Adverse - Not Significant
Wintering Birds	Some suitable habitats such as	Adverse impact as a result of disturbance	Local	Not Significant	Increased habitat available	Low Adverse - Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
	woodland, waterbodies and hedgerows have appropriate buffers. Management of lighting and vehicle movements.	due to lighting and movement				
Badger	A minimum buffer of 30m from badger setts. Management of lighting and vehicle movements.	Adverse impacts as a result of disturbance via operational activities	Local	Not Significant	Increase of grassland habitat available	Low Adverse- Not Significant
Otter	Appropriate buffer from riparian habitat	Adverse impacts as a result of disturbance via operational activities	Local	Not Significant	Creation of riparian bankside habitats	Low Adverse- Not Significant
Water vole	Appropriate buffer from riparian habitat	Adverse impacts as a result of disturbance via operational activities	Local	Not Significant	Creation of riparian bankside habitats	Low Adverse- Not Significant
Reptiles	Management of vehicle movements	None under embedded mitigation	Local	Not Significant	Increase of grassland habitat available	Negligible- Not Significant
Fish	Appropriate buffer from watercourses	None under embedded mitigation	Local	Significant	Creation of riparian bankside habitats	Negligible - Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
Invertebrates	Some suitable habitats such as woodland and hedgerows have appropriate buffers	Habitat management of Panel Areas to increase habitat quality	Local	Not Significant	Establishment of Habitat Management and Monitoring Plan as part of oLEMP Consultation with EA to use appropriate methods to minimise impacts to fish as a result of EMF.	Beneficial – Not Significant
Other protected species/ small mammals	Some suitable habitats such as woodland and hedgerows have appropriate buffers. Management of lighting and vehicle movements.	Adverse impact due to disturbance via operational activities	Local	Not significant	Creation of suitable habitat.	Negligible- Not Significant
Decommissioning						
Statutory Designated Sites	A minimum of 50m buffer	Temporary adverse impact due to Indirect impact from disturbance to designated features	National	Significant	Avoidance of key habitats, other mitigation to be outlined in HRA	Low Adverse- Not Significant
Non-statutory Designated Sites	A minimum of 50m buffer from Panel Areas. Measures to avoid pollution of	Temporary adverse impacts due to disturbance.	County	Not Significant	Sensitive lighting, noise and vibration scheme	Negligible- Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
	sediment transfer within oDEMP.					
Habitats	Buffers included for habitat such as hedgerows, woodland and waterbodies. Measures to avoid pollution of sediment transfer within oDEMP.	Temporary adverse impacts due to loss of habitat and habitat degradation	Local	Not Significant	Avoidance of direct loss where feasible	Negligible- Not Significant
Bats	Buffers included for suitable roosting and commuting habitat	Adverse impact due to permanent loss of foraging habitat, disturbance to foraging, commuting and roosting bats, incidental harm	County	Significant	Establishment of a sensitive lighting scheme	Low Adverse- Not Significant
GCN	Buffers included for waterbodies. Standard pollution avoidance during construction as outlined further within the oDEMP	Temporary adverse impact due to loss of habitat, disturbance, incidental harm	County	Significant	Avoid suitable habitats where possible. If not, GCN will be temporarily excluded from areas to be impacted.	Low Adverse- Not Significant
Breeding Birds	Some suitable habitats such as woodland and hedgerows have	Adverse impact due to disturbance, displacement, incidental harm.	County	Significant	Mitigation areas suitable for ground nesting birds to be included within	Low Adverse- Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
	appropriate buffers. Measures such as timing of works to avoid nesting bird season or provision of ECoW included within oDEMP	Possible increase in suitable habitat for ground nesting birds once the panels are removed			design. Avoid suitable habitats where possible.	
Wintering Birds	Some suitable habitats such as woodland, waterbodies and hedgerows have appropriate buffers	Adverse impact due to Permanent loss of habitat, disturbance, incidental harm	Local	Not Significant	Avoidance of key habitats where feasible.	Low Adverse - Not Significant
Badger	A minimum buffer of 30m from badger setts. Best practice measures such as ensuring all excavations are ramped or fenced included within oDEMP	Adverse impact due to temporary loss of for-aging habitat, disturbance, incidental harm	Local	Not Significant	Avoid suitable habitats where possible. Pre works badger checks	Low Adverse - Not Significant
Otter	Appropriate buffer from riparian habitat. Best practice measures such as ensuring all excavations are	Adverse impact due to temporary loss of for-aging habitat, disturbance, incidental harm	Local	Not Significant	Avoidance of key habitats and foraging habitats	Low Adverse - Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
	ramped or fenced included within oDEMP					
Water vole	Appropriate buffer from riparian habitat. Best practice measures included within oDEMP	Adverse impact due to temporary loss of for-aging habitat, disturbance, incidental harm	Local	Not Significant	Avoidance of key habitats and foraging habitats	Low Adverse - Not Significant
Reptiles	Best practice measures such as ensuring all excavations are ramped or fenced included within oDEMP.	Adverse impact due to temporary loss of habitat, disturbance, incidental harm	Local	Not Significant	Avoiding better quality reptile habitat.	Negligible - Not Significant
Fish	Appropriate buffer from watercourses. Pollution and sediment run off prevention measures included within the oDEMP.	Adverse impact due to temporary loss of habitat, disturbance and displacement of spawning grounds	Local	Not Significant	Avoidance better quality watercourses	Negligible - Not Significant
Invertebrates	Some suitable habitats such as woodland and hedgerows have appropriate buffers. Best	Adverse impact due to temporary loss of habitat, disturbance, incidental harm	Local	Not Significant	Avoidance of better-quality habitats where feasible.	Low Adverse - Not Significant

Receptor	Embedded and good practice measures	Description of impact	Importance of feature	Significance of effect	Additional mitigation	Residual effect
	practice measures included within oDEMP					
Other protected species/ small mammals	Some suitable habitats such as woodland and hedgerows have appropriate buffers. Best practice measures included within oDEMP	Temporary loss of habitat, disturbance, incidental harm	Local	Not Significant	Avoidance of key habitats and foraging habitats	Low Adverse - Not Significant

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